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A TREATISE

ON THE

VENEREAL DISEASE

B. B. Beckman

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A TREATISE
ON THE
VENEREAL DISEASE.

BY
JOHN HUNTER, F.R.S.

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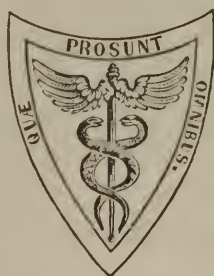
BY
DR. PHILIP RICORD,
SURGEON OF THE HÔPITAL DU MIDI, PARIS, ETC.

TRANSLATED AND EDITED, WITH NOTES,

BY
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Second Edition, Revised,

CONTAINING A RÉSUMÉ OF
RICORD'S RECENT LECTURES ON CHANCRE.



PHILADELPHIA:
BLANCHARD AND LEA.
1859.

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EDITOR'S PREFACE.

IN the early part of the present year, M. Fournier, Interne of the Hôpital du Midi, published a volume of notes of the recent lectures of M. Ricord on Chancres; enriched, also, by many remarks of M. Ricord in his clinical instruction at the bedside.¹ This volume was issued with the approval of M. Ricord, and under his supervision, so that it bears all the authority of the name of this eminent surgeon.

Though apparently limited in its subject, this work, in reality, embraces most of the important points connected with Syphilis. It is especially worthy of notice, since it contains those modifications of the views of M. Ricord and others, which recent investigation, excited by the increased interest in the doctrines of syphilis during the last few years, has introduced.

The American Editor of Ricord and Hunter has made a free translation of those portions of M. Fournier's work which are new, and added them in a condensed form, to the notes of the present edition. He would invite particular attention to the notes relating to the important distinction between infecting and non-infecting chancres, their diagnosis and treatment; the affections of the lymphatic ganglia corresponding to each; the laws of transmission of these two varieties of chancre; the question of the unity or duality of the syphilitic virus; the treatment of constitutional syphilis, and the curative and prophylactic effect of chlorate of potash on mercurial salivation.

It is believed by the Editor that the present edition of "Ricord and

¹ *Leçons sur le Chancre, professées, par le Dr. Ricord, Chirurgien de l'Hôpital du Midi, etc., rédigées et publiées par Alfred Fournier, Interne de l'Hôpital du Midi. Paris, 1858.*

Hunter," contains the fullest exposition of the views of M. Ricord that has yet been published.

Some slight modification of the typographical arrangement has been made, in order to render more distinct the authorship of the different portions of the work. All matter added to the original text of Hunter is inclosed in brackets. The notes of the Editor are printed in smaller type, and the additions are, moreover, distinguished by the names of "RICORD," "HOME," "G. G. B." (the initials of Mr. Babington), or "EDITOR," as respectively contributed by them. When these additions extend over more than one page, the names are placed at both the beginning and end, in order that the reader may readily trace the authority.

NEW YORK, *November*, 1858.

PREFACE TO THE FIRST EDITION.

THE school, of which M. Ricord is the head, has, by its adherence to some of the most important views of the immortal Hunter, and more particularly by its adoption of Hunter's division of constitutional syphilis into two periods, and of his belief in the non-contagiousness of secondary symptoms, acquired for itself the name of Hunterian. It is not without reason, therefore, that the names of these two distinguished authors, though separated by more than half a century, appear conjointly on the title-page of this volume.

M. Ricord's annotations to *Hunter's Treatise on the Venereal Disease* were first published at Paris, in 1840, in connection with Dr. G. Richelot's translation of the work, including the contributions of Sir Everard Home and Mr. Babington. In a second edition, which has recently appeared, M. Ricord has thoroughly revised his part of the work, bringing it up to the knowledge of the present day, and so materially increasing it that it now constitutes full one-third of the volume.

This publication has been received with great favor by the French, both because it has placed within their reach an important work of Hunter, of whom one of their most eminent living physicians says: "*Un siècle nous sépare bientôt de la publication de ses premiers travaux, et il a si peu vieilli, que, s'il est mal apprécié, c'est moins parce que nous l'avons laissé derrière nous que parce qu'il nous devance,*"¹ and also because it is the only recent practical work which M. Ricord has published, no edition of his *Traité des Maladies Vénériennes* having appeared for the last fifteen years.

¹ Trousseau, *Traité de Thérapeutique et de Matière Médicale*, p. L.

The present volume is a translation by the Editor of M. Ricord's annotations, and a reprint of the edition of Mr. George G. Babington, which was first published in 1837. It is hoped that the notes and additions by the Editor will be found either to assist the reader in a correct understanding of the text, or to contribute additional information on some of the important subjects herein treated, and that the index which has been added will increase the usefulness of the work.

278 SIXTH AVENUE, NEW YORK, }
September 16, 1853. }

MR. BABINGTON'S PREFACE.

OF all the works of John Hunter, there is none on which he bestowed more labor, or which he was more solicitous to perfect than his treatise on the Venereal Disease. "I am resolved," said he to a friend, "that it shall not be a mere bookseller's job, every subsequent edition rendering the former useless. The truth of the doctrines I have proved so long as to reduce them to conviction; and, in order to render the language intelligible, I meet a committee of three gentlemen¹ to whose correction every page is submitted." It would seem that this correction of style was adopted in the second edition. On comparing it with the first we find numberless verbal alterations, which were evidently intended to render the expressions more lucid and more elegant. It is doubtful whether much has been gained by the change. The language is certainly less rugged, but it is also less forcible, and occasionally less distinct and decided. However, as the corrections have extended in some instances to points of more consequence than style, the second edition must undoubtedly be considered as containing the latest experience and ultimate conclusions of the author. The third edition was published after his death by Sir Everard Home, who has in general followed the text of the first edition, and has introduced some passages which were certainly never written by John Hunter. For these reasons the text of the second edition has been followed as the most genuine: but, as the alterations of Sir E. Home profess to be derived from materials left by the author, it has been thought best not to omit them entirely, and consequently such of them as are more than verbal have been added in notes at the bottom of the page.

It cannot be disputed that the work thus produced bears marks of the mind that gave it birth. To form a just estimate of its merits, it is necessary to compare it with the books on the same subject which had previously appeared in this country. These seem, for the most part, to have been written less with the design of increasing the knowledge of the disease, than with a view to temporary notoriety, and to the emoluments which such notoriety might bring. John Hunter always had

¹ The three gentlemen were, Dr. (afterwards Sir Gilbert) Blane, Dr. George Fordyce, and Dr. David Pitcairn, and with these Mr. Marshall appears to have been associated.

higher objects. He has labored to apply to this disease the general principles of pathology, and to subject it to the same scrutinizing analysis which generally guided his philosophical researches. The facts he has selected from his daily experience are valuable, not for their singularity, but for the inferences to which they lead. Where the practice was previously uncertain and contradictory, he has often established systematic principles of treatment; and where the practice was right, he has placed it on a sure foundation, by substituting the deductions of reason for the habits of empiricism. With respect especially to diseases of the bladder and urethra, the observations contained in this work first threw light on those affections, and formed the basis on which our present accurate knowledge of them has been founded.

Yet at the same time it must be admitted that this treatise is not without defects; and that the reputation of John Hunter rests more on his other works than on this. Many of the remarks are rather theoretical than practical, and some of the doctrines have not obtained that general assent which has crowned most of his other labors. The causes of these imperfections are to be found in the nature of the subject and the character of the author.

A little reflection will show that the venereal disease was less adapted than many other subjects to the peculiar genius of John Hunter. The faculties which chiefly distinguished him from other men of science, and which generally insured his success, were an ardor and an energy which nothing could damp, and an industry which nothing could tire. Under the influence of these qualities he pushed his investigations with unexampled activity, and brought to light a multitude of facts, which the less energetic inquiries of other philosophers had failed to discover. Wherever our previous knowledge was partial and indistinct, the new facts which he collected by observation, or discovered by dissection, or established by experiment, illuminated the whole subject, and substituted the clear distinctness of the day for the obscurity and uncertainty of twilight. His view was always large and comprehensive; and by combining these new discoveries with what was known before, he deduced without difficulty laws which had eluded previous research, and then verified his deductions by a farther observation and a more extended experiment. It is more to the activity of his inquiries than to the strength of his reasoning powers that we owe his discoveries. Indeed, his powers of reasoning were scarcely on a level with his other faculties, but the errors of his logic were perpetually corrected by the variety and accuracy of his experiments.

Now it so happens that in the venereal disease he had little opportunity for the exercise of his usual means of investigation. Experiments on animals are impossible in this case, as the disease seems to be con-

fined to the human species. Dissections give little information, for the virus itself altogether eludes our sight; and such of its effects as are not obvious are for the most part too minute to be distinguished by the eye. As most syphilitic symptoms occur in parts which are superficial and exposed to view, their general form and character have long been familiar to surgeons; the minuter changes are not discoverable by simple inspection, nor easily demonstrable to the senses. The casual observations of every day were open to John Hunter as to others, but he was exposed to the same difficulties which had checked the progress of his predecessors, and was liable to be misled by the same causes of error. In the venereal disease we have abundance of facts, of a certain kind, on record. It is not additional experience that we want, but a more correct discrimination, which would enable us better to understand our experience, to disentangle its perplexities, and reconcile its apparent contradictions. The facts noticed by John Hunter are not sufficiently novel or important to throw of themselves much additional light on the pathology of the malady. He was therefore reduced to the necessity of reasoning from the old experience, and of endeavoring, by subjecting it to a more correct process of induction, to correct the errors and improve on the knowledge of those who had preceded him. Consequently, it is not surprising that his labors should have been less successful here than in some other branches of pathology, and that he should often have failed in removing the obscurity which envelops this malady. It may even be doubted whether his natural appetite for generalization has not sometimes misled him, and whether, in his desire to ascertain a general law, he has not sometimes abandoned his hold of the acknowledged facts of the disease, and left it even more obscure than before.

There was one way in which the investigation might have been conducted which would have promised higher results. The symptoms of the venereal disease, though very obvious, are at the same time infinitely various, and even to this day they have never been accurately discriminated. If the author had bent the full powers of his keen and penetrating mind to tracing out in the first instance a correct description of each separate symptom; if he had then pursued the research so as to have ascertained in each case the particular structure affected, and the particular nature of the morbid alteration, he would have laid a firm basis for his reasoning, and could not have failed to elucidate both this malady and many which resemble it. It is probable that he would have so ascertained the laws which regulate the peculiar action of the venereal virus, as to have left no room for confounding its effects with diseases from other causes. It is probable that he would have explained the apparent contradictions in the effect of remedies, and, by appropriating each to its peculiar class of affections, have rendered the

system of treatment no longer dubious and empirical, but clear and intelligible. It is certain that he would have opened the way for subsequent discoveries to an extent which cannot be calculated, and that, not only in the disease under consideration, but also in other maladies which have hitherto been little studied by pathologists, especially in eruptions and other diseases of the skin.

That such a task as this was well adapted to the powers of John Hunter cannot be questioned. The descriptions he has given in the work before us are sufficient of themselves to establish his reputation. In accuracy and distinctness they have never been surpassed, and they remain at the end of half a century the standard definitions to which all subsequent writers have referred. But the plan here sketched out would have been toilsome and long. It would have required the labor of a life. The fruit which it promised was remote and uncertain. It might never have been gathered by the author, but might have remained to be the spoil of a future generation. He followed his natural inclination. He preferred the more delusive, apparently the more direct road which has seduced so many philosophers. He sought to arrive at the general laws of nature at once by conjecture; rather than, by a close and detailed study of her inferior operations, to ascend, step by step, through a slow and gradual induction to those laws which govern her general procedure. "*Altera (via) a sensu et particularibus advolat ad axiomata maxime generalia, atque ex iis principiis eorumque immota veritate judicat et invenit axiomata media; altera a sensu et particularibus excitat axiomata, ascendendo continenter et gradatim, ut ultimo loco perveniatur ad maxime generalia.*"¹

But though this treatise is tainted more than any other of the works of John Hunter with the vice of a too hasty generalization, yet it is full of practical observations of the highest value, and must always form an essential part of the study of every surgeon who wishes to make himself acquainted with the disease of which it treats. In the present edition it has been attempted to render it more generally useful by engrafting on it the labors of other surgeons. The opinions of the author have been treated with the respect which is due to his high reputation; but where important facts have been brought to light by others, either in confirmation or in correction of his principles, they have been presented to the reader, in order that he may have before him in one view the present state of the science, and that, by comparing the reasoning of others with that of the author, he may be enabled to form a just opinion of the truth or the error of his conclusions.

G. G. BABINGTON.

LONDON, June 13, 1835.

¹ Bacon, Aphorism, xix.

CONTENTS.

| | PAGE |
|--|------|
| EDITOR'S PREFACE | iii |
| PREFACE TO THE FIRST EDITION | v |
| MR. BABINGTON'S PREFACE | vii |
| INTRODUCTION | 33 |
| 1. Of sympathy | ib. |
| 2. Of morbid actions being incompatible with each other | 34 |
| 3. Of the comparative powers of different parts of the body—from situa- tion—from structure | 36 |
| 4. Of parts susceptible of particular diseases | 37 |
| M. Ricord's addition | ib. |
| Editor's addition | ib. |
| 5. Of inflammation | 38 |
| 6. Of mortification | 39 |

PART I.

| | |
|---|-----|
| CHAPTER I.—OF THE VENEREAL POISON | 41 |
| 1. Of the first origin of the poison | ib. |
| 2. It began in the human race, and in the parts of generation | 42 |
| 3. Of the nature of the poison | ib. |
| Mr. Babington's addition | 44 |
| M. Ricord's addition | 46 |
| 4. Of the greater or less acrimony of the poison | 47 |
| 5. Of the poison being the same in gonorrhœa and in chancre | 48 |
| Mr. Babington's addition | 51 |
| M. Ricord's addition | 54 |
| Editor's addition | 57 |
| 6. Of the causes of the poisonous quality—Fermentation—Action | 58 |
| CHAPTER II.—THE MODE OF VENEREAL INFECTION | 62 |
| M. Ricord's addition | ib. |
| CHAPTER III.—OF THE DIFFERENT FORMS OF THE DISEASE | 63 |
| 1. Varieties in different constitutions | 64 |
| CHAPTER IV.—OF THE LUES VENEREA BEING THE CAUSE OF OTHER DISEASES | ib. |

PART II.

| | |
|--|-----|
| CHAPTER I.—OF GONORRHŒA | 67 |
| M. Ricord's addition | 68 |
| Editor's addition | 69 |
| 1. Of the time between the application of the poison and effect | ib. |
| M. Ricord's addition | 70 |
| 2. Of the difficulty of distinguishing the virulent from the simple gonor- rhœa | 71 |
| M. Ricord's addition | 72 |

| | PAGE |
|---|------------|
| 3. Of the common final intention of suppuration not answering in the present disease | <i>ib.</i> |
| M. Ricord's addition | 78 |
| 4. Of the venereal gonorrhœa | 79 |
| 5. Of the seat of the disease in both sexes | <i>ib.</i> |
| 6. Of the most common symptoms and the order of their appearance | 82 |
| 7. Of the discharge | 84 |
| M. Ricord's addition | 86 |
| 8. Of the chordee | 87 |
| 9. Of the manner in which the inflammation attacks the urethra | <i>ib.</i> |
| 10. Of the swelled testicle | 90 |
| M. Ricord's addition | 93 |
| 11. Of the swellings of the glands from sympathy | 97 |
| M. Ricord's addition | 98 |
| 12. Of the diseases of the lymphatics in a gonorrhœa | 99 |
| 13. Short recapitulation of the varieties in the symptoms | 100 |
| CHAPTER II.—OF THE GONORRHŒA IN WOMEN | 101 |
| 1. Of the proofs of a woman having this disease | 104 |
| M. Ricord's addition | 105 |
| CHAPTER III.—OF THE EFFECTS OF THE GONORRHŒA ON THE CONSTITUTION IN BOTH SEXES | 108 |
| CHAPTER IV.—OF THE CURE OF THE GONORRHŒA | 109 |
| 1. Of the different modes of practice—Evacuants—Astringents | 112 |
| 2. Of local applications—Different kinds of injections; irritating, sedative, emollient, astringent | 114 |
| CHAPTER V.—OF THE CURE OF GONORRHŒA IN WOMEN | 119 |
| CHAPTER VI.—OF THE TREATMENT OF THE CONSTITUTION IN THE CURE OF THE GONORRHŒA | 120 |
| Mr. Babington's addition | 122 |
| M. Ricord's addition | 125 |
| Editor's addition | 137 |
| CHAPTER VII.—OF THE TREATMENT OF OCCASIONAL SYMPTOMS OF THE GONORRHŒA | 139 |
| 1. Of the bleeding from the urethra | <i>ib.</i> |
| 2. Of preventing painful erections | <i>ib.</i> |
| 3. Of the treatment of the chordee | <i>ib.</i> |
| 4. Of the treatment of the suppuration of the glands of the urethra | 140 |
| 5. Of the treatment of the affection of the bladder from gonorrhœa | 141 |
| 6. Of the treatment of the swelled testicle | <i>ib.</i> |
| M. Ricord's addition | 143 |
| Editor's addition | 144 |
| 7. Of the decline and termination of the symptoms of gonorrhœa | 145 |
| M. Ricord's addition | 146 |
| CHAPTER VIII.—OBSERVATIONS ON THE SYMPTOMS WHICH OFTEN REMAIN AFTER THE DISEASE IS SUBDUED | 147 |
| 1. Of the remains of the disagreeable sensations excited by the original disease | 148 |
| M. Ricord's addition | 149 |
| Editor's addition | 150 |
| 2. Of a gleet | <i>ib.</i> |
| Mr. Babington's addition | 152 |
| 3. Of the cure of gleets—Constitutionally—Locally | 153 |
| M. Ricord's addition | 156 |
| 4. Of the remaining chordee | 158 |
| 5. Of the continuance of the irritation of the bladder | <i>ib.</i> |
| 6. Of the remaining hardness of the epididymis | 159 |
| M. Ricord's addition | <i>ib.</i> |

PART III.

| | PAGE |
|--|------------|
| CHAPTER I.—OF DISEASES SUPPOSED TO ARISE IN CONSEQUENCE OF VENEREAL INFLAMMATION IN THE URETHRA OF MEN | 161 |
| M. Ricord's addition | 162 |
| 1. Of strictures | 165 |
| M. Ricord's addition | 166 |
| CHAPTER II.—OF THE PERMANENT STRICTURE | 167 |
| Mr. Babington's addition | 170 |
| M. Ricord's addition | 171 |
| 1. Of the bougie | 172 |
| 2. Of the treatment of the permanent stricture | 173 |
| M. Ricord's addition | 177 |
| 3. Of the cure of stricture by ulceration | 179 |
| M. Ricord's addition | 182 |
| 4. Of the application of caustic to strictures | <i>ib.</i> |
| Mr. Babington's addition | 186 |
| M. Ricord's addition | 188 |
| CHAPTER III.—OF STRICTURES IN WOMEN | 194 |
| M. Ricord's addition | 195 |
| 1. Of the cure of strictures in women | <i>ib.</i> |
| M. Ricord's addition | <i>ib.</i> |
| 2. Of the gleet in consequence of stricture | <i>ib.</i> |
| CHAPTER IV.—OF STRICTURE ATTENDED WITH SPASMODIC AFFECTION | 196 |
| CHAPTER V.—OF SOME CIRCUMSTANCES ATTENDING THE USE OF BOUGIES—THEIR FIGURE AND COMPOSITION | 197 |
| M. Ricord's addition | 200 |
| 1. Of a new passage formed by bougies | 202 |
| M. Ricord's addition | 205 |
| CHAPTER VI.—OF DISEASES IN CONSEQUENCE OF A PERMANENT STRICTURE IN THE URETHRA | 209 |
| 1. Of the enlargement of the urethra | <i>ib.</i> |
| M. Ricord's addition | <i>ib.</i> |
| 2. Of the formation of a new passage for the urine | 210 |
| 3. Of inflammation of the parts surrounding the urethra | 215 |
| 4. Of the treatment of the inflammation in the surrounding parts | 217 |
| M. Ricord's addition | 218 |
| Editor's addition | 219 |
| 5. Of the effects of inflammation in the surrounding parts upon the constitution | 220 |
| 6. Of fistulæ in perinæo | 221 |
| 7. Of the operation for fistulæ in perinæo | <i>ib.</i> |
| Mr. Babington's addition | 224 |
| M. Ricord's addition | 225 |
| CHAPTER VII.—OF SOME OTHER AFFECTIONS OF THE URETHRA | 229 |
| 1. Of the spasmodic affections of the urethra | <i>ib.</i> |
| M. Ricord's addition | 230 |
| 2. Of the cure of the spasmodic affection of the urethra | <i>ib.</i> |
| 3. Of the paralysis of the urethra | 232 |
| 4. Cure of the paralysis of the urethra | <i>ib.</i> |
| 5. Of caruncles or excrescences in the urethra | <i>ib.</i> |
| 6. Of the cure of the excrescence or caruncle | 233 |
| CHAPTER VIII.—OF THE SWELLED PROSTATE GLAND | <i>ib.</i> |
| M. Ricord's addition | 237 |
| 1. Of the treatment of the swelled prostate gland | 238 |
| Mr. Babington's addition | 239 |
| M. Ricord's addition | <i>ib.</i> |

| | PAGE |
|--|------------|
| CHAPTER IX.—OF THE DISEASES OF THE BLADDER, PARTICULARLY FROM THE BEFORE-MENTIONED OBSTRUCTIONS TO THE URINE . . . | 240 |
| 1. Of the treatment where the actions of the urethra and bladder do not exactly alternate . . . | 242 |
| 2. Of the paralysis of the bladder from obstructions to the passage of the urine . . . | <i>ib.</i> |
| 3. Of the cure of the paralysis of the bladder from obstruction arising from pressure or spasm . . . | 245 |
| M. Ricord's addition . . . | <i>ib.</i> |
| CHAPTER X.—OF A SUPPRESSION OF URINE AND OPERATION FOR THE CURE OF IT . . . | 246 |
| Mr. Babington's addition . . . | 251 |
| 1. Of allowing a catheter to remain in the urethra and bladder . . . | 252 |
| 2. Of the increased strength of the bladder . . . | 253 |
| 3. Of the distension of the ureters . . . | 254 |
| 4. Of irritability in the bladder independent of obstructions to the passage of the urine . . . | <i>ib.</i> |
| 5. Of the cure of simple irritability of the bladder . . . | 255 |
| 6. Of a paralysis of the acceleratores urinæ . . . | <i>ib.</i> |
| CHAPTER XI.—OF THE DISCHARGE OF THE NATURAL MUCUS OF THE GLANDS OF THE URETHRA . . . | 256 |
| 1. Of the discharge of the secretions of the prostate gland and vesiculæ seminales . . . | <i>ib.</i> |
| M. Ricord's addition . . . | 257 |
| CHAPTER XII.—OF IMPOTENCE . . . | 258 |
| 1. Of impotence depending on the mind . . . | 260 |
| 2. Of impotence from a want of proper correspondence between the actions of the different organs . . . | 262 |
| CHAPTER XIII.—OF THE DECAY OF THE TESTICLE . . . | 265 |
| M. Ricord's addition . . . | 268 |
| CHAPTER XIV.—GONORRHEAL OPHTHALMIA, BY M. RICORD . . . | <i>ib.</i> |
| CHAPTER XV.—GONORRHEAL RHEUMATISM, BY M. RICORD . . . | 275 |

PART IV.

| | |
|--|------------|
| CHAPTER I.—OF CHANCRE . . . | 283 |
| Mr. Babington's addition . . . | 287 |
| M. Ricord's addition . . . | 291 |
| Editor's addition . . . | 299 |
| 1. Of the phimosi and paraphimosi . . . | 308 |
| M. Ricord's addition . . . | 311 |
| CHAPTER II.—OF CHANCRES IN WOMEN . . . | 313 |
| M. Ricord's addition . . . | 314 |
| CHAPTER III.—GENERAL OBSERVATIONS ON THE TREATMENT OF CHANCRE . . . | 315 |
| Mr. Babington's addition . . . | 316 |
| M. Ricord's addition . . . | 317 |
| 1. Of the destruction of a chancre . . . | 318 |
| Mr. Babington's addition . . . | 319 |
| M. Ricord's addition . . . | 320 |
| Editor's addition . . . | 322 |
| 2. Of the cure of chancres—Local application . . . | <i>ib.</i> |
| M. Ricord's addition . . . | 323 |
| 3. Of the treatment of phimosi in consequence of, or attended with chancre . . . | 331 |
| 4. Of the common operation for the phimosi produced by chancres . . . | 334 |
| 5. Of the constitutional treatment of phimosi . . . | 335 |
| Mr. Babington's addition . . . | 336 |
| M. Ricord's addition . . . | <i>ib.</i> |
| Editor's addition . . . | 338 |

| | PAGE |
|--|------------|
| 6. Of the treatment of the paraphimosis from chancre | 338 |
| M. Ricord's addition | 339 |
| 7. Of the cure of chancres by mercury given internally | 340 |
| M. Ricord's addition | 342 |
| Editor's addition | 344 |
| CHAPTER IV.—OF THE CURE OF CHANCRES IN WOMEN | 346 |
| M. Ricord's addition | <i>ib.</i> |
| CHAPTER V.—OF SOME OF THE CONSEQUENCES OF CHANCRES AND THE TREATMENT OF THEM | 347 |
| 1. Of dispositions to new diseases during the cure of chancres | <i>ib.</i> |
| Mr. Babington's addition on phagedenic ulcers | 349 |
| M. Ricord's addition | 352 |
| 2. Of ulceration resembling chancres | 353 |
| M. Ricord's addition | 354 |
| 3. Of a thickening and hardening of the parts | <i>ib.</i> |
| M. Ricord's addition | 355 |
| 4. Of warts | <i>ib.</i> |
| M. Ricord's addition | 356 |
| 5. Of excoriations of the glans and prepuce | 359 |

PART V.

| | |
|--|------------|
| CHAPTER I.—OF BUBO | 361 |
| CHAPTER II.—OF BUBOES IN WOMEN | 368 |
| Editor's addition | 369 |
| CHAPTER III.—OF THE INFLAMMATION OF BUBOES, AND THE MARKS THAT DISTINGUISH THEM FROM OTHER SWELLINGS OF THE GLANDS | 373 |
| CHAPTER IV.—GENERAL REFLECTIONS ON THE CURE OF BUBOES | 377 |
| 1. Of resolution of the inflammation of the absorbents on the penis | 379 |
| 2. Of the resolution of buboes in the groin | 380 |
| 3. Of the resolution of buboes in women | <i>ib.</i> |
| 4. Of buboes in other parts | 381 |
| 5. Of the quantity of mercury necessary for the resolution of a bubo | <i>ib.</i> |
| 6. Of the treatment of buboes when they suppurate | 382 |
| CHAPTER V.—OF SOME OF THE CONSEQUENCES OF BUBOES | 383 |
| M. Ricord's addition on the treatment of buboes | 387 |

PART VI.

| | |
|---|------------|
| CHAPTER I.—OF THE LUES VENEREA | 393 |
| M. Ricord's addition | 394 |
| 1. Of the nature of the sores or ulcers proceeding from the lues venerea | 397 |
| M. Ricord's addition | 399 |
| 2. Of the matter from sores in the lues venerea compared with that from chancres and buboes | 400 |
| M. Ricord's addition | 405 |
| 3. Of the local effects arising from the constitution considered as critical—Symptomatic fever | 406 |
| 4. Of the local and constitutional forms of the disease never interfering with one another | 408 |
| 5. Of the supposed termination of the lues venerea in other diseases | 409 |
| 6. Of the specific distance of the venereal inflammation | <i>ib.</i> |
| 7. Of the parts most susceptible of the lues venerea—Of the time and manner in which they are affected—What is meant by contamination, disposition and action—Summary of the doctrine | 410 |
| CHAPTER II.—OF THE SYMPTOMS OF THE LUES VENEREA | 418 |
| M. Ricord's addition | 420 |

| | PAGE |
|---|------------|
| 1. Of the symptoms of the first stage of the lues venerea . . . | 421 |
| Mr. Babington's addition on syphilitic eruptions . . . | 423 |
| Mr. Babington's addition on syphilitic affections of the throat . . . | 429 |
| Mr. Babington's addition on syphilitic iritis . . . | 431 |
| 2. Experiments made to ascertain the progress and effects of the venereal poison . . . | 432 |
| 3. Of the symptoms of the second stage of the lues venerea . . . | 434 |
| Mr. Babington's addition on syphilitic affections of the bones . . . | 435 |
| 4. Of the effects of the poison on the constitution . . . | 436 |
| M. Ricord's addition on the secondary and tertiary symptoms of syphilis . . . | 437 |
| Editor's addition . . . | 462 |
| CHAPTER III.—GENERAL OBSERVATIONS ON THE CURE OF THE LUES VENEREA . . . | 465 |
| 1. Of the use of mercury in the cure of the lues venerea . . . | 467 |
| Mr. Ricord's addition . . . | 472 |
| Mr. Babington's addition . . . | 473 |
| 2. Of the quantity of mercury necessary to be given . . . | 474 |
| 3. Of the sensible effects of mercury upon parts . . . | 475 |
| 4. Of the action of mercury . . . | 476 |
| 5. Of the different methods of giving mercury—Externally—Internally . . . | 478 |
| 6. Of the cure of the disease in the second or third stage . . . | 483 |
| 7. Of local treatment . . . | 485 |
| 8. Of abscesses—Exfoliation . . . | 486 |
| 9. Of nodes or tendons, ligaments and fasciæ . . . | <i>ib.</i> |
| 10. Of correcting some of the effects of mercury . . . | 487 |
| 11. Of the form of the different preparations of mercury when in the circulation . . . | 490 |
| 12. Of the operation of mercury on the poison . . . | 491 |
| 13. Of gum guaiacum and radix sarsaparillæ in the venereal disease . . . | 493 |
| M. Ricord's addition on the treatment of constitutional syphilis . . . | 494 |
| Editor's addition . . . | 497 |
| CHAPTER IV.—OF THE EFFECTS REMAINING AFTER THE DISEASE IS CURED, AND OF THE DISEASES SOMETIMES PRODUCED BY THE CURE . . . | 508 |
| 1. General observations on the medicines usually given for the cure . . . | 510 |
| 2. Of the continuance of the spitting . . . | 513 |
| CHAPTER V.—OF PREVENTING THE VENEREAL DISEASE . . . | 514 |
| M. Ricord's addition on the prophylaxis of syphilis . . . | <i>ib.</i> |

PART VII.

| | |
|---|-----|
| CHAPTER I.—OF DISEASES RESEMBLING THE LUES VENEREA WHICH HAVE BEEN MIS- | |
| TAKEN FOR IT . . . | 519 |
| Mr. Babington's addition . . . | 520 |
| Mr. Babington's addition . . . | 523 |
| M. Ricord's addition . . . | 530 |
| 1. Of diseases supposed to be venereal produced by transplanted teeth . . . | 536 |
| EXPLANATION OF THE PLATES . . . | 543 |
| INDEX . . . | 549 |

A TREATISE

ON THE

VENEREAL DISEASE.

INTRODUCTION.

Two motives have induced me to publish the following treatise. In the first place, I am not without hope that several new observations contained in it will be deemed worthy of the public attention; in the next place, I am desirous to have an opportunity of showing from whom some opinions that have made their way into the medical world originated.

But as much of the theory which will often be referred to in the course of this work is peculiar to myself, it seems necessary to give an introductory explanation of some parts of it, in order that the terms used may be the more intelligible to the reader.

§ 1. *Of Sympathy.*

I divide sympathy into two parts, *universal* and *partial*.

Universal sympathy is an affection wherein the whole constitution sympathizes with some sensation or action. Partial sympathy is an affection wherein one or more distinct parts sympathize with some local sensation or action.

The universal sympathies are different in different diseases; but those that occur in the venereal disease are principally two, the symptomatic fever and the hectic fever. The symptomatic fever is an immediate effect of some local injury, and seldom takes place in the venereal disease in any great degree under any of its forms, except in the case of a swelled testicle, which is itself an instance of a partial sympathy; the symptomatic fever here, therefore, is a universal sympathy arising from a partial one. The hectic fever is a universal sympathy with a local disease, which the constitution is not able to overcome. This takes place oftener and in a greater degree in the lues venerea than in any other form of the disease.

I divide partial sympathy into three kinds; the *remote*, the *contiguous*, and the *continuous*. The remote, is where there appears to be no visible connection of parts from whence we can account for such effects, as in the case of pain of the shoulder in an inflammation of the liver. The contiguous, is that which appears to have no other connection than what arises from vicinity or contact of separate parts, an instance of which we have in the stomach and intestines sympathizing with the integuments of the abdomen. The continuous, is where there is no interruption of parts, and the sympathy runs along from the irritating point, as from a centre, which is the most common of all sympathies. We have an example of this in the spreading of inflammation.

§ 2. *Of Morbid Actions being incompatible with each other.*

The venereal disease is not only suspected to be present in many cases where the nature of the disorder is not well marked, but it is supposed that it can be combined with other diseases, such as the itch and the scurvy. Thus, we hear of pocky itch and of scurvy and the venereal disease combined; but this supposition appears to me to be founded in error. I have never seen any such cases, nor do they seem to be consistent with the principles of morbid action in the animal economy. It appears to me, beyond a doubt, that no two actions can take place in the same constitution, or in the same part, at one and the same time. No two different fevers can exist in the same constitution, nor two local diseases in the same part, at the same time; yet as the venereal disease, when it attacks the skin, bears a resemblance to those symptoms which are vulgarly called scorbutic, they are often supposed to be mixed, and to exist in the same part.

What has been called a scorbutic constitution is no more than a constitution very susceptible of an action producing eruptions on the skin whenever an immediate cause takes place; and there are some parts of the body more susceptible of this than others, in which, therefore, a slighter immediate cause is sufficient to excite the action; but the easy susceptibility with respect to one disease is not a reason why a constitution should not likewise be susceptible of other diseases. A man may have the pox and the smallpox at the same time; that is, parts of his body may have been contaminated by the venereal poison, and the smallpox may take place, and both diseases may appear together, but not in the same parts. If both were consequences of fever, and each followed the fever nearly about the same time, it would be impossible for each to have its respective eruption, even in different parts, at the same time; two fevers, antecedent to these different diseases, cannot be coexistent.¹

¹ RECORD.—Hunter does not believe it possible for two distinct morbid actions to take place in the same part at the same time. Hunter's doctrine taken literally, would be a very serious error. Our daily practice presents individuals affected at the same time with scabies, and primary or constitutional syphilis; also with scurvy or scrofula, and syphilitic symptoms. These are cases in which there is, strictly speaking, no "pocky itch," nor syphilitic scurvy or scrofula, but a complication of two concomitant affections, which singly or together assume an acute form. Moreover, we meet with numerous cases in which scrofula, an herpetic or dartrous diathesis, or scurvy, impresses upon

From this principle, I think I may fairly put the following queries. Does not the failure of inoculation, and the power of resisting many infections, sometimes arise from the person's having at the same time some other disease, and therefore being incapable of a new action? Does not the great difference in the time, from the application of the cause to the appearance of the effect, in many cases, depend upon the same principle? It has been sometimes observed that the puncture in the arm has shown no sign of inflammation in fourteen days after the application of the variolous poison. Has there not been another disease in the constitution at the time of inoculation? Does not the cure of some diseases depend upon the same principle? The suspension or cure of a gonorrhoea by a fever may be an instance of this.

Let me illustrate this principle still farther, by one of many cases which have come under my own observation. On Thursday, March 16, 1775, I inoculated a gentleman's child, in whose arms it was observed I made large punctures. On the Sunday following, he appeared to have received the infection, a small inflammation or redness appearing round each puncture, and a small tumor above the surface of the skin having been observed. On the 20th and 21st, the child was feverish, but I declared that the fever was not variolous, as the inflammation had not all advanced since the 19th. On the 22d, a considerable eruption appeared, which was evidently the measles; upon this, the sores on the arms appeared to go back, becoming less inflamed. On the 23d, he was very full of the measles, the punctures on the arms being in the same state as on the preceding day. On the 25th, the measles began to disappear. On the 26th and 27th, the punctures began to look a little red. On the 29th, the inflammation increased, and there was a little matter formed. On the 30th, he was seized with fever. The smallpox appeared at the regular time, went through its usual course, and terminated favorably.¹ In like manner, it may be observed that

the syphilitic symptoms a peculiar stamp, in which we are forced to recognize a combination of these morbid causes, acting together on the same region and on the same tissues.

If Hunter's doctrine can be sustained with regard to acute and especially febrile affections, where, by the laws of revulsion, the stronger disease may moderate or suspend the feebler for the time being, it is often untrue of diseases analogous to syphilis. There is no disease which is an absolute protection against contracting syphilis; and the latter, in turn, cannot, while it lasts, protect against any other, if it be not against a new constitutional syphilis.—RICORD.

¹ EDITOR.—The following case is added in the French edition of this work. It was reported in the *Zeitschrift für die gesammte Medicin*, for November, 1836, and was also inserted by Dr. Glehn, in the *Transactions of the Medical Society of St. Petersburg*, under the head of "Struggle between Scarlatina and Smallpox."

On the 25th of November, 1834, at a time when epidemics of scarlatina and smallpox were prevailing, a young naval officer was seized with vomiting, without any apparent cause. He was better on the 26th; but on the 27th he experienced headache, vertigo, and extreme prostration; his pulse was frequent, his tongue coated, and his eyes injected. Chills alternated with flushes of heat. These symptoms became very violent on the 28th; and on the 29th an eruption of scarlatina, in patches of a dark-red color, appeared on his face, neck, chest, and upper extremities. At the same time, isolated pustules were observed on the forehead and face. The velum palati and uvula were inflamed, and deglutition was very difficult. The next day, the eruption of scarlatina faded and disappeared, whilst the pustules, on the contrary, became more numerous and clearly defined, and were at once recognized as belonging to that form of smallpox which is called varioloid. The variolous eruption afterwards extended

the venereal disease makes its appearance at different periods after infection. Is not this explicable on the same principle?

§ 3. *Of the Comparative Powers of different Parts of the Body—from Situation—from Structure.*

We shall have occasion to observe, that the parts affected assume the morbid action more readily and continue it more rapidly when near to the source of the circulation than when far from it; for the heart exerts its influence upon the different parts of the body in proportion to their vicinity to it; and the more distant that the parts are, the weaker are their powers.

This is perhaps better illustrated by disease than by any actions in health; for in health we have no comparative trials, as no two parts of the machine, at unequal distances from the heart, can be thrown into equal action, and therefore no conclusions can be drawn. It may be observed that all the vital parts are near the heart.

In diseases, we see mortification arising from debility, in the extremities oftener than in other parts, more especially if the person is tall, the heart not propelling the blood to these distant parts with equal force. In such a state of constitution, those who labor under a hemiplegia are often found to die at last from a mortification in the extremities of the paralytic side. In some of these cases, the arteries give way, and allow of an extravasation of the blood, and therefore we may reasonably suppose that they are proportionally weak in health. We also find that such extravasation commonly begins in the extremities. This principle is not only evident in these two diseases, but also in every disease that can affect an animal body. It appears in the readiness with which diseases come on and proceed in parts distant from the source of the circulation, and also in the steps towards a cure.

Parts differ not only in their powers, in proportion as they are nearer or farther from the heart, but likewise according to their peculiar structure, whereby they vary as much in the progress of morbid actions as in the operations of health.

An animal body is composed of a variety of substances; as muscle, tendon, cellular membrane, ligament, bone, nerve, &c. We have, therefore, an opportunity of observing the comparative progress of diseases in them, and their comparative powers of performing a cure; and we find that they differ very much from one another in those respects. How far these differences take place in all diseases, I have not been able to determine; but should suppose that in specific diseases, as scrofula and cancer, there is in general no difference in the mode of action in any of the structures,¹ these diseases producing the same

over the whole body. All the alarming symptoms disappeared with the scarlatina, and the varioloid run its course very mildly.

Hufeland relates a similar fact in his *Observations on Smallpox and Vaccination at Weimar*, in 1798. In this case, also, the smallpox held the ascendancy. For several other cases of coexisting variola and scarlatina, see the *Archives Gén. de Méd.*, for Jan., 1848; also Valleix, *Guide du Médecin Practicien*, vol. v. p. 412.—Ed.

¹ Here it is to be understood that we do not include those parts which have a greater tendency to specific diseases than what many others have; as the lymphatics to the scrofula, the breast to the cancer.

specific effects in all the parts that are capable of being affected by them; but in diseases arising from accident, a great difference in the degrees of action takes place, the parts from such a cause being allowed to act according to their natures; which observation holds good also in the venereal disease. This difference appears to be chiefly in the degrees of strength and weakness in resisting morbid action. The less the natural powers of action are in any particular structure of parts, the less they are able to resist disease; therefore bone, tendon, ligament, and cellular membrane go through their morbid actions more slowly than muscle or skin; and this principle is applicable to the venereal disease.¹

§ 4. *Of parts susceptible of particular Diseases.*

There are some parts much more susceptible of specific diseases than others. Poisons take their different seats in the body as if allotted for them. Thus we have the skin attacked with what are vulgarly called scorbutic eruptions, and many other diseases; it is also the seat of the smallpox and the measles; the throat is the seat of the hydrophobia and the whooping-cough. The scrofula attacks the absorbent system, especially the glands. The breasts, testicles, and the conglomerate glands, are the seat of cancer. The skin, throat, and nose, are more readily affected by the lues venerea than the bones and periosteum; which, on the other hand, suffer sooner than many other parts, particularly the vital parts, which, perhaps, are not at all susceptible of the disease.

[RICORD.—I exhibited to the Academy of Medicine some syphilitic tubercles of the brain, which coexisted with tubercles of the cellular tissue, in a patient with tertiary syphilis. My colleague, M. Cullerier, presented another case of the same affection to this learned Society, a short time after.]

[EDITOR.—The early writers on syphilis assigned it as a frequent cause of disease of the internal organs, and particularly of the lungs. Subsequently, the opinion which Hunter expresses prevailed: that the vital organs are not susceptible of this disease; but within the last few years, the subject has again excited attention, and sufficient facts have been brought forward to warrant the belief that these parts are not exempt from syphilitic manifestations.

Dr. Schutzenberger, in the *Strasbourg Medical Gazette*, for March, 1850, details several cases of severe cerebral symptoms which depended on constitutional syphilis. They consisted of vertigo, tremor, epilepsy, and muscular debility, in one or more extremities. In two of these cases, the symptoms disappeared under the use of iodide of potassium.

Sandras, in his excellent work on nervous diseases, relates a case of epilepsy which resisted treatment for years, when the physician of the patient accidentally discovered symptoms of secondary syphilis. He subjected him

¹ Some exceptions should, however, be made with regard to venereal diseases. Next to the mucous membranes and the skin, the cellular tissue is doubtless most subject to the morbid action of syphilis; and, of all the tissues, the serous resists it most.—RICORD.

to antisyphilitic treatment, and the epilepsy disappeared, never to return. Sandras concludes that the epilepsy in this case was dependent on some syphilitic tumor of the brain, which was removed by the treatment.

Syphilitic affections of the lungs, heart, and liver, will also be described in the latter part of this work, when we come to consider tertiary syphilis.

In the present state of science, we may conclude :—

1. That the existence of syphilitic lesions of the viscera is proved by analogy, by certain cases in pathological anatomy, and by cures effected by antisyphilitics, after other means have failed, in serious affections of the viscera, coexisting with undoubted specific symptoms.

2. That these lesions cannot be recognized, at present, by any pathognomonic sign, aside from the history of the case and the coexisting symptoms; but that the possibility of their existence should always be borne in mind, and an appropriate treatment be employed, whenever a syphilitic cause is suspected.—EDITOR.]

§ 5. *Of Inflammation.*

I consider common inflammation to be an increased action of the smaller vessels of a part, joined with a peculiar mode of action, by which they are enabled to produce the following effects; to unite parts of the body to each other, to form pus, and to remove parts of the solids. These effects are not produced by a simple increase of action or enlargement of the vessels, but by a peculiar action, which is at present, perhaps, not understood.

These three effects of inflammation I have called distinct species of inflammation. That which unites parts, I have called the adhesive inflammation; that which forms pus, the suppurative inflammation; and that which removes parts, the ulcerative inflammation.

In the adhesive inflammation, the arteries throw out coagulable lymph, which becomes the bond of union. This, however, is not simply extravasated, but has undergone some change before it leaves the arteries, since in inflamed veins it is found lying coagulated upon the internal surface of the vessel, which could not have happened if simply extravasated. In the suppurative inflammation, a still greater change is produced upon the blood before it is thrown out by the arteries, whereby it is formed into pus: which change is probably similar to secretion. In the ulcerative inflammation, the action of the arteries does not remove the parts; that office is performed by the absorbent vessels which are brought into action.

In the first two species of inflammation, there must be a change in the disposition and mode of action of the arteries; for the suppurative species cannot be considered as simply an increase of action of the adhesive, as its effects are totally different; but, in the third species, there is probably no change of action in the arteries from that of the second; the action only of the absorbents being superadded, by which solid parts, and of course the arteries themselves, are removed.

§ 6. *Of Mortification.*

Mortifications are of two kinds, one preceded by inflammation, the other not. But as the cases of mortifications which will be mentioned in this work are all of the first kind, I shall confine my observations to that species.

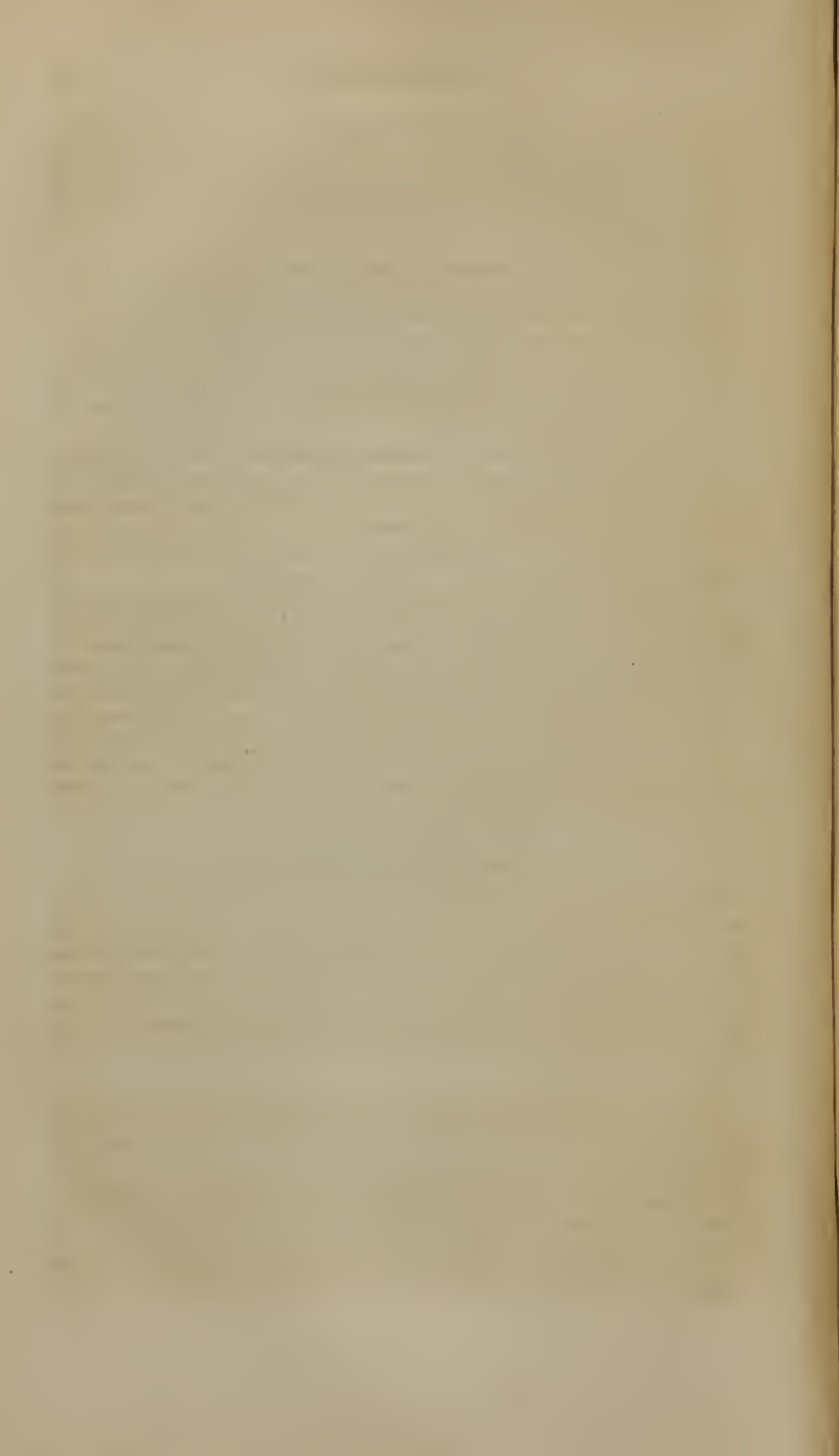
I consider inflammation as an increased action of that power which a part is naturally in possession of. This increased action, in healthy inflammations at least, is probably attended with an increase of power; but in inflammations which terminate in mortification there is no increase of power. On the contrary, there is a diminution of power, which, joined to an increased action, becomes the cause of mortification, by destroying the balance which ought to subsist between the power and action of every part.

If this account of mortifications be just, we shall find it no difficult matter to establish a rational practice. But, before we attempt this, let us just take a view of the treatment hitherto recommended, and see how far it agrees with our theory.

It is plain, from the common practice, that the weakness has been attended to, but it is as plain that the increased action has been overlooked, and, therefore, the whole aim has been to increase the action, with a view to remove the weakness. The Peruvian bark, *confectio cardiaca*, *serpentaria*, &c., have been given in as large quantities as the case appeared to require, or the constitution could bear; by which means an artificial or temporary appearance of strength has been produced, while it was only an increased action. The cordials and wine, upon the principle on which they have been given, are rationally administered; but there are strong reasons for not recommending them, arising from the general effect which all cordials have of increasing the action without giving real strength; and the powers of the body are afterwards sunk proportionally as they have been raised; by which nothing can be gained, but a great deal may be lost; for, in all cases, if the powers are allowed to sink below a certain point, they are irrecoverable.

The local treatment has been as absurd as the constitutional. Scarifications have been made quite to the living parts, that stimulating and antiseptic medicines might be applied to them, such as turpentine, the warmer balsams, and sometimes the essential oils. Warm fomentations have been also applied as congenial to life; but warmth always increases action, and stimulants are improper where the actions are already too violent.

Upon the principles here laid down, the bark is the only medicine that can be depended upon, as it increases the powers and lessens the action. Upon many occasions, opium will be of singular service by lessening the action, although it does not give real strength. I have seen good effects from it, both when given internally, in large doses, and when applied to the part. To keep the parts cool is proper; and all the applications should be cold. The above mentioned practice is to be kept in view in mortifications that happen in the venereal disease.



PART I.

CHAPTER I.

OF THE VENEREAL POISON.

THE venereal disease arises from a poison, which, as it is produced by disease, and is capable of again producing a similar disease, I call a morbid poison, to distinguish it from the other poisons, animal, vegetable, and mineral.

The morbid poisons are many, and they have different powers of contamination. Those which infect the body either locally or constitutionally, but not in both ways, I call *simple*. Those which are capable of affecting the body both locally and constitutionally, I call *compound*. The venereal poison, when applied to the human body, possesses a power of propagating or multiplying itself; and, as it is also capable of acting both locally and constitutionally, it is a compound morbid poison. Like all such poisons, it may be communicated to others in all the various ways in which it can be received, producing the same disease in some one of its forms.

§ 1. *Of the first Origin of the Poison.*

Though the first appearance of this poison is certainly within the period of modern history,¹ yet the precise time and manner of its origin has hitherto escaped our investigation, and we are still in doubt whether it arose in Europe or was imported from America. I shall not attempt to discuss this question; and those who wish to examine at length the facts, authorities, and arguments brought in favor of the latter opinion, may consult Astruc; and, for the former, a short treatise² published in

¹ This is not proved.—RICORD.

² Entitled *A Dissertation on the Origin of the Venereal Disease*; proving that it was not brought from America, but began in Europe from an epidemical distemper. Translated from the original manuscript of an eminent physician. London, printed for Robert Griffiths, 1751.

[The author's name is Antonio Nunés Ribeiro Sanchez. He was born at Pogna-Ma-coen, Portugal, in 1699, and died at Paris, October 14, 1783. His work was published in French, and entitled *Dissertation on the Origin of the Venereal Disease, proving that it was not brought from America, and that it commenced in Europe by an Epidemic*. Paris, 1753. He afterwards published *An Historical Investigation on the Appearance of the Venereal Disease in Europe*. Lisbon, 1774. Finally, still another work by Sanchez was published after his death, entitled *Observations on Venereal Diseases*. Paris, 1785.—Ed.]

1751, without a name. The author of this treatise appears to have considered the subject very fully, and, as far as reasoning goes on a subject of this kind, proves that the disease was not brought from the West Indies. Not contented with this, he goes on to account for its first rise in Europe; but in this he is not equally successful. The subject is a difficult one, and the want of a sufficient number of facts leaves too much room for conjecture.

We shall not, therefore, enter farther into this question; nor is it material to know at what period, and in what country, this disease arose; but we may in general affirm that, as animals are not naturally formed with disease, or so as to run spontaneously into morbid actions, but with a susceptibility of such impressions as produce such actions, diseases must always arise from impressions made upon the body; and as man is probably susceptible of more impressions that become the immediate cause of disease than any other animal, and is besides the only animal which can be said to form artificial impressions upon himself, he is subject to the greatest variety of diseases. In one of those self-formed situations, therefore, the impression most probably was given which produced the venereal disease.

§ 2. *It began in the Human Race, and in the Parts of Generation.*

In whatever manner it arose, it certainly began in the human race, as we know no other animal that is capable of being infected with this poison.¹ It is probable, too, that the parts of generation were the first affected; for if it had taken place in any other part of the body, it might probably never have gone farther than the person in whom it first arose, and therefore never have been known; but being seated in the parts of generation, where the only natural connection takes place between one human being and another,² except that between the mother and child, it was in the most favorable situation for being propagated; and as we shall find hereafter, in the history of the disease itself, that no constitutional effect of this poison can be communicated to others, we are led of necessity to conclude that its first effects were local.³

§ 3. *Of the Nature of the Poison.*

We know nothing of the poison itself, but only its effects on the human body. It is commonly in the form of pus, or united with pus,

¹ Hunter's opinion appears to be correct. I have taken syphilitic pus in every possible condition, and attempted to inoculate with it dogs, cats, rabbits, guinea-pigs, and pigeons, which, it has been asserted, are soon killed by the absorption of the virus. In no case, in spite of the variety of my experiments, has it been possible to communicate the disease. Some persons have lately succeeded, after numerous failures, in inoculating primary symptoms (*non-indurated* chancres) upon various animals, monkeys, cats, &c., and then inoculating man from these animals; but without the production of buboes or constitutional symptoms. But this is not syphilis!

We must not, as the physiological school has done in later times, confound simple ulcerations and catarrhal affections, to which animals are subject as well as man, with true syphilis; nor primary with secondary symptoms.—RICORD.

² This is not absolutely true.—RICORD.

³ This proposition is true.—RICORD.

or some such secretion, and produces a similar matter in others, which shows that it is most generally, although not necessarily, a consequence of inflammation. It produces or excites, therefore, in most cases, an inflammation in the parts contaminated; besides which inflammation, the parts so contaminated have a peculiar mode of action superadded, different from all other actions attending inflammation; and it is this specific mode of action which produces the specific quality in the matter. It is not necessary that inflammation should be present to keep up this peculiar mode of action, because the poison continues to be formed long after all signs of inflammation have ceased. This appears from the following facts: men having only what is called a gleet, or healing chancre, give the disease to sound women; and many venereal gonorrhoeas happen without any visible signs of inflammation.¹

In women, the inflammation is frequently very slight, and often there is not the least sign of it, for they have been known to infect men, though they themselves have had no symptoms of inflammation, or of the disease in any form.² Therefore, the inflammation and suppuration, when present, are only attendants on the peculiar mode of action, the degree in which they take place depending more on the nature of the constitution than on that of the poison.

The formation of matter, also, though a very general, is not a constant attendant on this disease; for we sometimes find inflammation produced by the venereal poison which does not terminate in suppuration; such inflammation I suspect to be of the erysipelatous kind. It is the matter produced, with or without inflammation, which alone contains the poison; for without the formation of matter no venereal poison can exist. Therefore, a person having the venereal irritation in any form, not attended with a discharge, cannot communicate the disease to another. To communicate the disease, therefore, it is necessary that the venereal action should first take place, that matter should be formed in consequence of that action, and that the matter should be applied to a sound person or part.³

¹ By the word *inflammation*, in this place, Hunter evidently means acute inflammation; for, otherwise, he would be inconsistent with his own doctrine that pus is a product of inflammation, and a necessary vehicle of syphilitic virus.

Chancres, which are *absolutely* undergoing the *healing process*, become simple ulcers, and cease to be contagious. My experimental inoculations place this truth beyond a doubt. Where the contrary is apparently the case, the reparative stage is incomplete, and some part of the ulcer remains in the period of specific ulceration.—RICORD.

² If this were true, Hunter would again be at complete variance with himself. Women can communicate syphilis only during the time that they are themselves infected. When they apparently communicate the disease, without offering any trace of it themselves, it is because their symptoms are deep-seated and concealed from view, and not discovered for want of a speculum-examination; or, else, having had previous connection with infected men, they harbor virulent pus for a time in their organs, and then communicate it to others, without becoming diseased themselves.—RICORD.

³ Hunter's proposition is entirely correct; no syphilitic virus is produced without suppuration, and no contagion nor transfer of the virus is possible without virulent pus. The exception which Hunter seems to make to this law is only an apparent one; and is due to the fact that he does not recognize the two distinct properties of virulent pus, which may act as a simple agent, like other kinds of pus, such as the erysipelatous; but which, when it acts primarily in virtue of its specific character, inevitably produces *ulcers and suppuration*.—RICORD.

That the venereal disease is to be propagated only by matter, is proved every day by a thousand instances. Married men contract the disease, and, not suspecting that they have caught it, cohabit with their wives, even for weeks. Upon discovering symptoms of the disease, they, of course, desist; yet in all my practice I never once found that the complaint was communicated under such circumstances, except where they had not been very attentive to the symptoms, and therefore continued the connection after the discharge had appeared. I have gone so far as to allow husbands, while infected, but before the appearance of discharge, to cohabit with their wives in order to save appearances, and always with safety. I could carry this still farther, and even allow a man who has a gonorrhoea to have connection with a sound woman, provided that great care be taken to clear all the parts of any matter, by first syringing the urethra, making water, and washing the glans.¹

The matter which is impregnated with this poison, when it comes in contact with a living part, irritates that part, and inflammation is the common consequence. It must be applied either in a fluid state, or rendered fluid by the juices of the part to which it is applied. There is no instance where it has given the infection in the form of vapor, as is the case in many other poisons.²

[G. G. B.—The omission of the last sentence of the last paragraph but one, in Sir Everard Home's edition, is not without reason, since the truth of the doctrine is, to say the least, very questionable, and the practice which is deduced from it is undoubtedly most mischievous and reprehensible.

The author's doctrine is, that the virus resides in pus, or some such secretion, and hence he draws two practical conclusions:—

1. That when there is no pus, or puriform secretion, the disease cannot be communicated. So that before the appearance of a gonorrhoea, or after the healing of a chancre, there is no possibility of infection.

2. That even when pus actually exists, yet if particular care be taken to remove it in the first instance, by very careful ablution, the individual may have connection with a sound woman without danger of infecting her.

The second conclusion cannot be too strongly reprobated. It is opposed to every day's experience; and from the omission of the passage in Sir E. Home's edition, it may be supposed that farther observation had led the author himself to change his opinion before the termination of his life.

The former position, also, is by no means free from danger, as will be seen by the following instances, which are far from singular:—³

¹ The last sentence omitted.—HOME.

² Hunter's remark is very just; virulent pus, in order to act, must be in a liquid form. The scabs which form on chancres, and dry there, preserve their virulent property; and, after being kept a long time, they may be inoculated, like smallpox or vaccine scabs, when diluted with water.—RICORD.

³ Hunter's first conclusion cannot be called in question; but Mr. Babington's cases are open to criticism in every point of view.—RICORD.

A married woman was seized with the usual symptoms of gonorrhœa, which greatly surprised her, as her husband was free from complaint. On questioning, however, the husband, he confessed that he had had connection with a common girl about a week before his wife complained; but he positively asserted that he had had no discharge or uneasiness whatever, and certainly then showed no signs of disease. In about four days afterwards, that is to say, nearly a fortnight after the impure connection, and a week after he must have communicated the disease to his wife, a gonorrhœal discharge appeared on him.

A gentleman, when absent from home, exposed himself to the hazard of infection. At the end of three days he returned home, and in about four days afterwards his wife had a gonorrhœa. On the tenth day after the connection, the gentleman first perceived a discharge, and the other symptoms of gonorrhœa.

But it may be said that, though such cases show that the conclusion at which the author has arrived is practically unsafe, they by no means disprove the truth of the general principle on which it was founded. It may be said that in these cases it is an error to suppose that there is no purulent secretion; that in the very early stage of a gonorrhœa it is probable that the pus is too small in quantity to flow from the urethra; that it lodges in the lacunæ, and is washed out by the urine, and is thus concealed from observation; but that it not less really exists; and that the position, therefore, remains untouched—that where there is no matter there can be no infection.

However, there is another class of cases which go still farther to throw doubts on the truth of this doctrine.

A gentleman was exposed to infection when in London. A day or two afterwards, he set off for Ireland, where his family resided. He made some stay at Cheltenham, and while there, there appeared on the inner prepuce two or three small indurations or tubercles. He showed them to a surgeon, who convinced himself that there was no ulceration, and did not believe the affection to be venereal. After a short interval, he returned to Ireland, these indurations still existing, and infected his wife, who suffered from primary sores.

A gentleman had an induration on the penis, which remained after the healing of a chancre. He suffered repeatedly from secondary symptoms, which were as often removed by appropriate treatment; but the induration always remained. At length, when a considerable interval had passed without a relapse, and he believed himself to be finally cured, he married, though the induration was not removed. His wife was infected.

Cases of this kind might be multiplied without difficulty, and almost necessarily lead to the inference that infection may take place from the contact of a simple chancreous thickening, although no ulceration whatever is present. A misconception of this truth has often led to consequences which are most lamentable. In a considerable proportion of those cases in which a wife has been infected in consequence of marriage with a man laboring under syphilis, the communication seems to have taken place from the cicatrix of a sore which has been healed.—G. G. B.]

[RICORD.—In the present state of science, it is impossible to accept the cases by which Mr. Babington attempts to refute Hunter's propositions.

With the uniform results of experimental inoculation as my proof, I assert that no surface which is not smeared with virulent pus, and which secretes none during coitus, however prolonged, can ever communicate syphilis.

But, following out this doctrine, we cannot, as Hunter did, allow intercourse to a patient, with the use of lotions as the sole guarantee against infection; for the morbid secretion is incessant, and becomes more active during the increased vitality which takes place in sexual intercourse. But before all suppuration, and without its development during the sexual act, can the disease be communicated? Doubtless no. There must be virulent pus; the quantity may be very small, and may pass unseen by the patient in the early stage; but no effect can be produced without it. To be convinced of the truth of these assertions, follow the results of artificial inoculation. Often on the second day the budding pustule already furnishes contagious pus, but in quantities so minute that, if it were concealed in the urethra or vagina, the most careful observation of the patient's linen, or of the external parts of the affected organs, would discover nothing. Again, it is well known how little of this pus on the point of a lancet is sufficient to communicate the disease.

In opposition to these incontestable facts, is it possible to offset Mr. Babington's two cases of gonorrhoea, whose whole value is based on the morality of the patients alone? Without discussing in this place the nature and diagnosis of gonorrhoea, who does not see, from the order in which the symptoms in these two cases were developed in the husbands, that the disease was really communicated to them by their wives; either because the parties overindulged in coitus after long abstinence, and produced the affection by mechanical irritation, or because the two women had previous disease of the parts, of which they were ignorant, or which they were interested in concealing, until a convenient time for confession. These cases are so common in practice, that they do not need farther comment.

Does an induration without suppuration; does the perfect cicatrix of a chancre, allow the communication of syphilis, as Mr. Babington asserts? Here again his observations are founded on female morality, and on the supposition, in every case, that the disease could have been communicated to the wives only through their husbands.

The following are the results that facts, looked at in a different light, have taught me:—

Chancres may be developed in a follicle, in the cellular tissue, or in the superficial lymphatic vessels, and be accompanied by surrounding induration, which incloses them in a kind of shell or cyst. Under these circumstances, they may appear to be simple indurations without suppuration; whilst, during sexual intercourse, the walls of the abscess gape, the pus escapes and communicates the disease, which is wrongfully attributed to a consecutive ulceration. These cases are common, and I have shown a large number of them at my clinique. But in

every case where the induration has been complete, and free from primary pus shut up within, if, from any cause, ulcerations or mechanical lesions ensued upon the induration without new infection, the pus then furnished has never been inoculable.

However, in any case, in which there remain any suspicious symptoms, and if there be any uncertainty as to the cicatrix being perfect, or any possibility of any hidden points of suppuration, it is necessary to abstain from sexual intercourse, and especially from marriage.—RICORD.]

§ 4. *Of the greater or less Acrimony of the Poison.*

Venereal matter must in all cases be the same; one quantity of matter cannot have a greater degree of poisonous quality than another; and, if there is any difference, it is only in its being more or less diluted, which produces no difference in its effects. One can conceive, however, that it may be so far diluted as not to have the power of irritation. Thus, any fluid taken into the mouth, capable of stimulating the nerves to taste, may be so diluted as not to be tasted. But if the poison can irritate the part to which it is applied to action, it is all that is required; the action will be the same, whether from a large or small quantity, from a strong or a weak solution.¹

We find from experience that there is no difference in the kind of matter; and no variation can arise in the disease from the matter's being of different degrees of strength, for it appears that the same matter affects very differently different people. Two men having been connected with one woman, and both catching the disease, one of them shall have a violent gonorrhœa, or chancre, while the other shall have merely a slight gonorrhœa. I have known one man give the disease to different women, and some of the women have had it very severely, while in others it has been very slight. The same reasoning holds good with regard to chancres. The variations of the symptoms in different persons depend upon the constitution and habit of the patient at the time. What happens in the inoculation of the smallpox strengthens this opinion. Let the symptoms of the patient from whom the matter is taken be good or bad; let it be from one who has had a great many pustules, or from one who has had but few; let it be from the confluent or distinct kind, applied in a large quantity or a small one, it produces always the same effect. This could only be known by the great numbers that have been inoculated under all these different circumstances.²

¹ These words added: "Since those men who have taken great pains in washing the parts immediately after connection have caught the disease, and the symptoms have been equally severe as in others who used no such precaution."—HOME.

² Sir E. Home has here added a note, in which he calls in question the truth of this doctrine, as far as regards smallpox. He says that he has in many instances diluted the variolous matter, and always found that the disease produced from such matter was milder than when employed for inoculation in an undiluted state. However, in the venereal disease, it must be acknowledged that there are no facts which prove the existence of a similar difference in the virulence of the contagion, or would justify the conclusion that the variations in the symptoms depend on any other cause than the constitution and habits of the recipient.—G. G. B.

§ 5. *Of the Poison being the same in Gonorrhœa and in Chancre.*

It has been supposed by many that the gonorrhœa and the chancre arise from two distinct poisons; and their opinion seems to have some foundation, when we consider only the different appearances of the two symptoms, and the different methods of cure; which, with respect to the nature of many diseases, is too often all we have to lead our judgment. Yet, if we take up this question upon other grounds, and also have recourse to experiments, the result of which we can absolutely depend upon, we shall find this notion to be erroneous.

If we attend to the manner in which the venereal poison was communicated to the inhabitants of the islands of the South Seas, there are many circumstances which tend to throw light upon the present question. It has been supposed, as no mention is made of a gonorrhœa at Otaheite, that it must have been the chancre that was first introduced into that island, and that of course nothing but a chancre could be propagated there; for, as no gonorrhœa had been communicated, no such disease could take place. But if we were to reason upon all the probable circumstances attending the voyages to that part of the world, we should conclude the contrary; for it was almost impossible to carry a chancre so long a voyage without its destroying the penis; while we know from experience that a gonorrhœa may continue for a great length of time. It is mentioned in *Cook's Voyage*, that the people of Otaheite, who had this disease, went into the country, and were cured; but when it became a pox it was then incurable. This shows that the disease which they had must have been a gonorrhœa, for we know that it is only a gonorrhœa that can be cured by simple means; and farther, if it had been a chancre, and they had been acquainted with the means of curing it, they could also have cured the lues venerea.¹

Wallis left Plymouth in August, 1766, and arrived at Otaheite in July, 1767, eleven months after his embarkation; and, if none of his men had the disease when he sailed, there was hardly a possibility of their contracting it anywhere afterwards in the voyage. This appears to be too long for a gonorrhœa to last. But let us suppose even that Wallis carried it thither in his ship, one or two of his crew having the disease; as he stayed there five weeks, it was very possible, even very probable, that such person or persons might have communicated it so quickly as to have become the cause of contamination of the whole crew of his ship. But as this did not happen, it is a presumptive proof that Wallis did not carry it thither.

Bougainville left France in December, 1766; but he touched at several places where some of his people might have got the disease, the last of which places was Rio de la Plata, which he left in November, 1767, and arrived at Otaheite in April, 1768, five months after. This interval of time agrees better with the usual continuance of the disease than the length of Wallis's voyage; and, therefore, from this

¹ Hunter, it appears, did not know that chancres may last several months, or even several years, and continue inoculable. He was also ignorant of a fact, which every day's experience teaches, that a chancre may get well of itself, or by the use of simple remedies, and never give rise to constitutional syphilis.—RICORD.

circumstance, it becomes more probable that Bougainville carried it thither. Besides, it is likely that he could guard his people less against the disease than Wallis; for Wallis could have his choice of men at his first setting out, which was all that was necessary to prevent his carrying the disease with him; for he ran no risk of contracting it afterwards; but although Bougainville had the same advantage at first, yet he had it not afterwards, for his men were in the way of infection in several places, and he had no opportunity of changing them, and probably no great chance of having them cured. The circumstance of the disease being found by Bougainville at Otaheite soon after his arrival is a kind of proof that he carried it thither himself; for I observed before, that if Wallis had carried it by one man only, this man could in a very few days have so far propagated it as to have spread it through the whole ship's crew; and as Bougainville arrived at the island ten months after Wallis, there was a sufficient time for the inhabitants of the whole island to have been infected, and the ravages of the disease must have been evident to them immediately upon their arrival. Bougainville remained only nine days at the island of Otaheite, and observed nothing of the disease till some weeks after his departure, when it was found that several of the crew were infected, which most probably must have happened in consequence of the poison being carried there by some of his own people. It is also mentioned by Cook that the Otaheiteans ascribed the introduction of the disease to Bougainville; and we can hardly suppose that they would be so complaisant to our countrymen as to accuse Bougainville, when they must have known whether the disease was imported by Wallis or not, especially as they had no reason to be partial in favor of the people who accompanied the latter. But as we find in Cook's last voyage that the disease in every form is new there, and as we have no new intelligence of a gonorrhœa being since introduced, we must suppose that every form of the disease has been propagated from one root, which most probably was a gonorrhœa.¹

If any doubt still remain with respect to the two diseases being of the same nature, it will be removed by considering that the matter produced in both is of the same kind, and has the same properties; the proofs of which are, that the matter of a gonorrhœa will produce either a gonorrhœa, a chancre, or the lues venerea; and the matter of a chancre will also produce either a gonorrhœa, a chancre, or the lues venerea.²

The following case is an instance of a gonorrhœa producing a lues

¹ Hunter's charges against Bougainville are without foundation. In the first place, it does not follow from the fact that Wallis's sailors were not diseased at the time of setting out, that the disease may not have appeared a few days later. And, in the next place, since Bougainville discovered that his men were infected a few days after leaving Otaheite, why should he not have discovered it as easily, if they had first contracted the disease in another port?—RICORD.

² The following paragraph is here inserted:—

"That chancre is sometimes the consequence of gonorrhœa is rendered probable by the following case: A. B. had a gonorrhœa about the beginning of January, 1788; the inflammation went off, the discharge continued; about a month after, a chancre appeared on the glans penis, for which he took mercury, and it got well in about a month."—HOME.

venerea: A gentleman twice contracted a gonorrhœa, of which he was cured both times without mercury. About two months after each, he had symptoms of the lues venerea. Those in consequence of the first infection were ulcers in the throat, which were removed by the external application of mercury; the symptoms in consequence of the second were blotches on the skin, for which also he used the mercurial ointment, and was cured. With regard to the lues venerea proceeding from chancres, instances occur so frequently to every one's observation as to require no farther proof here.

Since, then, it appears that the gonorrhœa and chancre are the effects of the same poison, it may be worthy of inquiry to what circumstances two such different forms of the disease are owing.

To account for these two very different effects of the same poison, it is only necessary to observe the difference in the mode of action of the parts affected when irritated, let the irritation be what it may. The gonorrhœa always proceeds from a secreting surface,¹ and the chancre is formed on a non-secreting surface; and in this last the part to which the poison is applied must become a secreting surface before matter can be produced. All secreting surfaces in the body being probably similar, one mode of application only is necessary to produce this disease in them all, which is by the poisonous matter simply coming in contact with them. But to produce the chancre, the venereal matter may be applied in three different ways: the first and most certain is by a wound, into which it may be introduced; the second is by applying the matter to a surface with a cuticle, and the thinner that is, it allows the matter to come more readily to the cutis; and the third is by applying the matter to a common sore already formed.

The poison, then, being the same in both cases, why do they not always happen together in the same person? For one would naturally suppose that the gonorrhœa, when it has appeared, cannot fail to become the cause of a chancre; and that this, when it happens first, must produce a gonorrhœa. Although it does not often happen so, yet it sometimes does; at least, there is great reason to believe so. I have seen cases where a gonorrhœa came on; and in a few days after in some, in others in as many weeks, a chancre has appeared; and I have also seen cases where a chancre has come first; and in the course of its cure, a running and pain in making water have succeeded. It may be supposed that the two diseases arose from the original infection, and only appeared at different times; and their not occurring oftener together would almost induce us to believe it was so, since the matter is the same in both, and therefore capable of producing either the one or the other.

I suspect that the presence of one irritation in these parts becomes

¹ By secreting surfaces, I mean all the passages for extraneous matter, including also the ducts of glands, such as the mouth, nose, eyes, anus, and urethra; and by non-secreting surfaces, the external skin in general. To which I may add a third kind of surface, leading from the one to the other, as the glans penis, prelabium of the mouth, the inside of the lips, the pudendum; which surfaces, partaking of the properties of each, but in a less degree, are capable of being affected in both ways, sometimes by being excited to secretion, and at other times to ulceration.

in general a preventive of the other. I have already observed, that the two parts sympathize in their diseases; and it is possible that that very sympathy may prevent the appearance of the real disease; for if an action has already taken place which is not venereal, it is impossible that another should take place till that ceases; and it is probable that this sympathy will not cease while the cause exciting it exists; and therefore when both happen in the same person at the same time, I suspect that either the urethra never had sympathized with the chancre, or if it did at first, that the sympathy had ceased, and then the venereal matter might stimulate the parts to action.

[G. G. B.—There is yet a stronger argument than any which is here given. The author inoculated himself with the matter of gonorrhœa, and the consequence was the production of chancres, followed by bubo, and by secondary symptoms. The experiment is related at length in Part VI., Chap. II., Sect. 2, of the present work.

But, nevertheless, the identity of the poison of gonorrhœa with that of chancre has been disputed, and that on no slight grounds.

In reply to the argument drawn from the transfer of the venereal disease to the islands in the South Seas, it has been denied that the disease exists there at all. Mr. Wilson, surgeon to His Majesty's ship Porpoise, visited Otaheite in 1801, and, after a careful investigation, came to the conclusion that the venereal disease was then unknown in that island.

It may also be alleged that even if the disease actually prevails there, as has been reported by others, it by no means follows that it must have been originally carried thither in the form of gonorrhœa. The facts stated by John Hunter do not bear out his conclusion. Bougainville left the Rio de la Plata in November, 1767, and arrived at Otaheite in April, 1768. It is very possible that a chancre might have existed during the five months which intervened. Cases frequently occur in which primary sores continue for a much longer period, without occasioning any remarkable destruction, and certainly without at all rendering the subject incapable of sexual intercourse.

The author affirms that cases occur in which true chancres are produced in those parts which are steeped in the discharge of a gonorrhœa. At the same time, he acknowledges that such a circumstance is extremely rare. Yet nothing is more common than that excoriations should arise on the surface of the glans, or on the inside of the prepuce, from the contact of gonorrhœal matter. These excoriations, if neglected, will last for an indefinite period; but if the irritating matter is carefully removed by very frequent ablution, they will heal in two or three days, without the least necessity for the exhibition of mercury. Why do they not assume the characters of chancres, or infect the system? Surely their innocence affords a negative proof of the diversity of the virus, more strong than the very rare occurrence of true chancres can be supposed to give of its identity. For it must not be forgotten that, in these cases, the chancre may be attributed to another cause. It may be that the patient has again exposed himself to infection, and that the chancre has arisen from this second exposure. The patient, under such circumstances, is naturally disposed to conceal his

misconduct. Still, he may often be induced to confess it, on a strict examination; and in those cases where no such avowal can be elicited, it is, perhaps, most reasonable to suspect that it is only prevented by shame.

It cannot be denied that there are cases in which secondary symptoms appear to be the consequence of gonorrhœa; but these are so rare that they must rather be considered as anomalies which we cannot, as yet, account for, than be admitted in contradiction to the general current of experience. The secondary symptoms, in such instances, are rarely of an indubitable character. It may be doubted whether distinct copper tubercles ever followed simple gonorrhœa. We have generally a mottled state of the skin, or the lighter and more fugitive forms of lichen, or slight excoriation of the surface of the tonsil.

It has been asserted that women who are affected with gonorrhœa alone, will frequently produce chancres in those men that are connected with them. Without venturing to give a positive denial to this statement, it may be suggested that its truth has seldom, if ever, been satisfactorily ascertained. The investigation of the surgeon has evidently been confined to the external parts. The interior of the vagina has not been examined, yet it is certain that chancres do occur here, though more rarely, so as to be discovered only by the use of a speculum. When to this consideration is added all the deception which is constantly practised in regard to sexual intercourse, it must be allowed that these statements are deserving of very little confidence.

There still remains the experiment of John Hunter; and if such experiments were multiplied, it cannot be denied that they would be decisive. That in his case the system was infected with the venereal virus can scarcely be questioned; but it may be doubted whether the virus might not have been derived from some other source than inoculation with the matter of gonorrhœa. The chances of falling into error are so numerous, that such experiments should be frequently repeated. As it is, the case stands alone, opposed to the general course of experience, and opposed to a series of other experiments, which rest on the authority of Mr. Benjamin Bell. The subjects were medical students, who instituted the experiments expressly with the view of deciding this question. They are thus related by Mr. Bell (*Bell On Venereal Disease*, vol. i. p. 439):—

“‘Matter,’ says one of these individuals, ‘was taken upon the point of a probe, from a chancre on the glans penis, before any application was made to it, and completely introduced into the urethra, expecting thereby to produce gonorrhœa. For the first eight days, I felt no kind of uneasiness, but about this period, I was attacked with pain in passing water. On dilating the urethra as much as possible, nearly the whole of a large chancre was discovered, and in a few days thereafter, a bubo was formed in each groin. No discharge took place from the urethra during the whole course of the disease; but another chancre was soon perceived in the opposite side of the urethra, and red precipitate was applied to it, as well as to the other, by means of a probe, previously moistened for the purpose. Mercurial ointment was at the same time rubbed on the outside of each thigh, by which a profuse

salivation was excited. The buboes, which till then had continued to increase, became stationary, and at last disappeared entirely; the chancres became clean, and by a due continuance of mercury, a complete cure at last was obtained.'

"The next experiment was made with the matter of gonorrhœa, a portion of which was introduced between the prepuce and glans, and allowed to remain there without being disturbed. In the course of the second day, a slight degree of inflammation was produced, succeeded by a discharge of matter, which, in the course of two or three days, disappeared.

"The same experiment was, by the same gentleman, repeated once again, after rendering the parts tender to which the matter of gonorrhœa was applied; but no chancre ever ensued from it.

"Two young gentlemen, while prosecuting the study of medicine, became anxious to ascertain the point in question; with which view they resolved on making the following experiments, at a time when neither of them had ever labored under either gonorrhœa or syphilis; and both in these and in the preceding experiments, the matter of infection was taken from patients who had never made use of mercury.

"A small dossil of lint soaked in the matter of gonorrhœa was by each of them inserted between the prepuce and glans, and allowed to remain on the same spot for the space of twenty-four hours. From this they expected that chancres would be produced; but, in the one a very severe degree of inflammation ensued over the whole glans and preputium, giving all the appearances of what is usually termed gonorrhœa spuria; a considerable quantity of fetid matter was discharged from the surface of the inflamed parts; and for several days he had reason to fear that an operation would be necessary for the removal of a paraphimosis. By the use of saturnine poultices, however, laxatives, and low diet, the inflammation abated, the discharge ceased, no chancres took place, and he soon got entirely well.

"The other gentleman was not so fortunate. The external inflammation, indeed, was slight, but by the matter finding access to the urethra, he, on the second day, was attacked with a severe degree of gonorrhœa, which continued for a considerable time to give him a great deal of distress; nor did he for upwards of a year get entirely free from it.

"By this he was convinced of the imprudence and hazard of all such experiments; nor could he be prevailed on to carry them farther, although they were keenly prosecuted by his friend, who, soon after the inflammation arising from his first experiment was removed, inserted the matter of gonorrhœa on the point of a lancet beneath the skin of the preputium, and likewise into the substance of the glans; but although this was repeated three different times, no chancres ensued. A slight degree of inflammation was excited, but it soon disappeared, without anything being done for it. His last experiment was attended with more serious consequences. The matter of a chancre was inserted on the point of a probe to the depth of a quarter of an inch, or more, in the urethra. No symptoms of gonorrhœa ensued; but in the course of five or six days a painful inflammatory chancre was perceived on

the spot to which the matter was applied. To this succeeded a bubo, which ended in suppuration, notwithstanding the immediate application of mercury; and the sore arising from this proved both painful and tedious. Ulcers were at last perceived in the throat; nor was a cure obtained till a very large quantity of mercury was given, under a state of close confinement, for a period of thirteen weeks."

These experiments, which strictly accord with the general results of experience, must be admitted to disprove altogether the argument derived from the difference between a secreting and a non-secreting surface, and to afford a very strong presumption that, at least in the great majority of cases, the poison of gonorrhœa is not identical with that of chancre.—G. G. B.]

[RICORD.—The question has been long discussed, and is still discussed at the present day, whether gonorrhœa is identical with syphilis in its cause and constitutional effects, and whether it differs from it only in its primary form, owing to the peculiar locality and the anatomical and physiological nature of the tissues which it affects.

It must be confessed, that, in spite of the numerous works which have been written to solve this interesting problem, at the head of which, since the time of Tode,¹ I rank the remarkable work of Hernandez, which in 1810 received the prize from the Société Médicale de Besançon, no solution which has satisfied every mind has been attained. Facts calculated to elucidate this question, and experiments capable of solving it, have not, however, been wanting; but the systematic spirit, which has ruled the observations of some men, and falsely guided others, has of necessity conducted, in most cases, to erroneous conclusions. Authors have found it often necessary to evade a contradictory case, to suspect the good faith of an opponent, or even to expressly deny a fact; the work of Hernandez, the most complete on this subject, is an example.

For my part, I find the most weighty arguments in the absolute agreement of all these writers, and in admitting, without exception, the materials which they have furnished; for a fact is a material thing that cannot be destroyed by another fact, but a good explanation may destroy false explanations.

Hunter inoculated gonorrhœal pus and produced a chancre, followed by its characteristic constitutional symptoms. Harisson conveyed pus from a chancre, by means of a sound, into the urethra, and produced a gonorrhœa; whence it has been concluded that the cause of the two is identical. On the other hand, Tode and Duncan, as well as Bell, in his experiments, have never succeeded in producing a chancre with

¹ TODE, J. C. über die Erkenntniss und Heilung des Trippers. Kopenh. und Leipzig, 1790.

HERNANDEZ.—Analytical Essay on the Non-identity of the Gonorrhœal and Syphilitic Virus. Toulon, 1812.

SWEDIAUR, F. X.—Practical Observations on the More Obstinate and Inveterate Venereal Complaints. London, 1784.

BELL, BENJAMIN.—A Treatise on Gonorrhœa Virulenta and Lues Venerea. Edinburgh, 1793.

DUNCAN.—Medical Cases selected from the Records of the Public Dispensary at Edinburgh. Edinburgh, 1778.—Ed.

gonorrhoeal matter; whilst pus from a chancre introduced into the urethra was followed by a chancre in that canal; which facts have, of necessity, led them to admit a difference in the intimate nature of the two diseases. And yet, all these experiments are true, although contradictory; for their difference is only apparent, and dependent upon an erroneous interpretation.

In order to draw a rigorous conclusion from facts, no circumstance connected with them should be disregarded. Every time that experimenters, to whatever school belonging, have taken pus from the surface of a chancre, and have applied it to a surface which was exposed to direct observation, they have produced chancres. It is only then, when the morbid matter was derived from deeply hidden parts, the actual condition of whose tissue could not be directly observed, or when virus was implanted in such parts, that results have seemed different and conclusions opposed. We find no experimenter asserting that muco-pus taken from a gonorrhoeal ophthalmia, or from a balanitis free from ulceration, and inoculated upon the skin, or any visible mucous surface, has given rise to a chancre. M. Puche's cases of inoculation of the muco-pus of a balano-posthitis,¹ that were thought to prove the contrary, have been withdrawn by M. Puche himself, after farther experiments more carefully made. On the other hand, when pus from a chancre has been properly inoculated, on any of the tissues whatever, without exception, it has invariably produced a chancre; and when a gonorrhoea alone has seemed to follow its application to mucous surfaces, one of two things was true; either, as I have elsewhere said, the pus did not act specifically, and gave rise only to a catarrhal affection, which, in its turn, was incapable of inoculation; or else the chancre, which was produced, escaped observation from its situation, and only furnished a discharge externally, which was mistaken for a gonorrhoea.

The following is a summary of the results of my experiments and observations, collected during a period of more than twenty years:—

I. Whenever muco-pus is taken from a surface free from ulceration—no matter what the previous symptoms may have been, the seat of the disease, its duration, or its degree of intensity—the results of its artificial inoculation are negative, on whatever tissue the experiment is made.

II. The existence of a mere ulceration, without distinction of kind, upon mucous surfaces affected with a running, is not sufficient to produce a chancre. A gonorrhoea, like any other inflammation, may induce simple ulceration of the tissues which it affects; but to produce a chancre, there must be pus from a chancre in the stage of specific progress.

III. When I take muco-pus, or pure pus, from a mucous surface that I have not previously explored, and am able to obtain positive results by inoculation, I am forced to infer the existence of a concealed chancre. This rational diagnosis is always verified in women by means of the speculum, which, in these cases, never fails to reveal

¹ Inflammation of the mucous membrane of the glans, and of the internal surface of the prepuce.—Ed.

a chancre. In man, by separating the lips of the meatus, it is often easy to see the specific ulcer at a greater or less depth in the urethra. At other times, too deeply situated to be seen, the chancre only shows itself externally by the development of an induration of greater or less extent, or by perforating the canal and involving the external parts.

And, lastly, pathological anatomy has added a final argument, which ought to carry conviction with it. I have shown to the Academy of Medicine two urethras taken from patients who died with symptoms of gonorrhœa, and in whom I had diagnosed urethral chancres. As the autopsy proved, both had chancres at different depths of the canal, and one of them even in the bladder.¹ (See Pl. 8.)

IV. Deeply-seated chancres of the vagina and uterus are more common than deeply-seated chancres of the urethra; and the latter are found more frequently in women than in men. We see also—and this accords with what authors say—more women than men with apparent gonorrhœas communicate chancres; and in women much more than in men constitutional symptoms occur preceded only by a running, whose source has not been explored.

V. The occurrence of secondary symptoms in man, as a sequence of an apparently gonorrhœal discharge, is still rarer than the occurrence of urethral chancres; since every chancre, whatever its seat, does not of necessity cause syphilitic infection of the system.

VI. There does not exist a single authentic fact in science which proves that an individual, whose mucous membrane was open to inspection during the course of a gonorrhœal attack, without being complicated with chancre, has afterwards shown any symptoms of constitutional syphilis.

VII. There are not two kinds of gonorrhœa, the one virulent and the other mild; differing only in the nature of their cause, the quality of their secretion, and their possible consequences, but *without any difference in their effect on the primarily affected tissues*. What authors have called virulent gonorrhœa, is only a chancre concealed in the urethra, vagina, &c., recognizing necessarily a specific cause, often assuming the appearance of a gonorrhœal discharge, but existing only in virtue of an ulceration, which alone can give rise to constitutional infection. No exception to this rule can be deduced from a rigorous observation of facts.

Since my experiments, the difference in form and effect between gonorrhœa and a chancre can no longer be sought for, either:—

1. In the nature of the tissues, as Hunter supposed, who thought that a secreting surface was only adapted to gonorrhœa, whilst non-secreting surfaces were favorable to the development of a chancre; or,

2. In a difference of intensity in the action of the specific cause. For here, whilst Swediaur says that a too powerful action of the virus produces a running, which, by protecting the surface, prevents ulceration, the absorption of the virus and the constitutional effects; M. Lagneau maintains the contrary, and regards gonorrhœa as only a

¹ See my Practical Treatise on Venereal Diseases. Paris, 1838.

superficial effect of the venereal virus, which, in this case, is insufficient to produce a chancre; he believes, too, that the virus *requires the neighboring surfaces to be intact, in order to be absorbed by them*; or,

3. In idiosyncrasies, as Thomas Rose does; or,

4. As Hufeland does, in certain conditions of the virus; free in chancre; and confined in gonorrhœa by a *covering of mucus*, which, *isolating it from the surfaces which secrete it, prevents them from ulcerating!*

At the present day *inoculation* proves that gonorrhœa and chancre are two distinct diseases; and this is the only differential pathognomonic sign between two affections, which it is more important to distinguish than Hunter supposed.—RICORD.]

[EDITOR.—M. Vidal, in his recent work on venereal diseases (Paris, 1853), while he admits the existence of non-virulent gonorrhœa, still maintains that in most cases gonorrhœa and syphilis are due to the same cause, viz., a specific virus. From M. Vidal's well-known opposition to M. Ricord (which juts out on every page of his work), and from the fact that this is one of the chief points in dispute between Ricord and his opponents, it is to be supposed that the work in question sums up all the arguments which science can furnish at the present day in favor of the identity of the two diseases, and makes out the best case possible.

After stating that gonorrhœa may be produced by many non-specific causes, such as the presence of a foreign body in the urethra, too frequent coitus, etc. etc., M. Vidal says: "In my opinion, the *most frequent* and *most effective cause* of gonorrhœa is *virulent pus*, that is, pus bearing syphilitic virus. Syphilitic virus is therefore to come in for a large share of the etiology of gonorrhœa, *a fact which should never be forgotten in the treatment.*" Without detailing the arguments which are adduced to support this opinion, suffice it to say that there are none that are new, and none that are not fully discussed by M. Ricord in these notes; that M. Vidal does not admit inoculation as a diagnostic sign between simple and virulent gonorrhœa; that he denies the existence of urethral chancres posterior to the fossa navicularis (and yet in this very book he gives a plate of a chancre in the bladder, with a full report of the case, which occurred in his own practice!), and that he makes no attempt to explain why, though "virulent pus is the most frequent cause of gonorrhœa," secondary symptoms, apparently following it, are so rare.

But how does he distinguish a case of specific gonorrhœa from one which is not? What course does he pursue in his treatment? These are the all-important questions for the great majority of practical surgeons, and for the patients who apply to them. M. Vidal's answer to the former question is not so long but that it may be quoted in toto. "It is difficult to distinguish the two," he says; "but if you can satisfy yourself that there was true incubation in the case, and if the discharge tend to a chronic state, you will incline to believe it specific, and *vice versa*; and if syphilitic symptoms afterwards appear, the diagnosis will be plain."(!) Pray, in what case of gonor-

rhœa was incubation (so-called) ever absent? Does the discharge ever commence immediately after the sexual act? Again, is not a tendency to become chronic characteristic of all cases of urethral gonorrhœa; a disease which, left to itself, rarely terminates in less than three months?

But, since Vidal believes that gonorrhœa is most frequently due to virulent pus, and states that "this fact should never be forgotten in the treatment," we are led to infer that he treats most of his patients with antisyphilitics. We turn to his book, where fourteen pages are devoted to the treatment of gonorrhœa, but we search in vain to find anything relative to constitutional antisyphilitic treatment. There is not a word on the subject! In the following section, however, where six pages are devoted to the treatment of gleet, we find one sentence, and one only, on this point, as follows: "When there is reason to suppose that gleet is a primary syphilitic symptom, which has become chronic, or that it is a consecutive (secondary) symptom, the constitutional treatment of syphilis should be followed."

These quotations are all the light which M. Vidal gives us, to guide our diagnosis between a virulent and non-virulent affection, and to guide our treatment in warding off a constitutional infection and its sad consequences! Could there be a more virtual confession that M. Vidal and his school cannot distinguish gonorrhœa virulenta from gonorrhœa benigna, and that, whatever their theory of the nature of gonorrhœa may be, in practice they treat it as a simple inflammation?—EDITOR.]¹

§ 6. *Of the Causes of the Poisonous Quality—Fermentation—Action.*

As the consideration and explanation of this point will throw some light upon the disease and cure, I may be allowed to dwell a little upon it. It has been supposed by some that the poisonous quality of the matter arises from a fermentation taking place in it as soon as it is formed. But whether this poisonous quality arises from that cause, or whether the animal body has a power of producing matter according to the irritation given, whereby the living powers, whenever irritated in a particular manner, produce such an action in the parts as to generate a matter similar in quality to that which excited the action, is what I am now to consider.

In the examination of this subject, I shall confine myself to gonorrhœa. In support of either of the two opinions, it must be supposed that the venereal matter has, by its specific properties, a power of irritation beyond common matter. I have already observed that it has the power of exciting inflammation even on the common skin, and of forming a chancre, which power is not possessed by common matter. In the first opinion, it must be supposed that there is no specific inflammation or suppuration produced by the application of the venereal matter, but only a common inflammation and suppuration; and that the matter capable of producing these effects acts as a ferment upon

¹ This and other points, upon which Ricord and his opponents differ, are most ably discussed by M. Diday; *Nouvelles Doctrines sur la Syphilis*, Paris, 1858.

the new-formed matter, rendering it venereal as soon, or nearly as soon, as it is formed; and as there is a succession of secretions, there immediately follows a succession of fermentations. Now, let us see how far this idea agrees with all the variety of phenomena attending the disease. First, it may be asked, what becomes of this ferment in many cases where the suppuration does not come on for some weeks after the irritation and inflammation have taken place? In such cases, we can hardly suppose the original venereal matter to remain, and to act as a ferment. Secondly, when there is a cessation of the discharge, and no matter formed, which sometimes happens for a considerable time, and yet all the symptoms recur, what is it that produces this fermentation a second time? Nothing can but a new application of fresh venereal matter. When, for example, the irritation is translated to the testicle, and the discharge is totally stopped, as often happens, what becomes of the virus, and how is a new virus formed when the irritation falls back upon the urethra?¹ Thirdly, if the poisonous quality were produced by fermentation taking place in the matter already formed, it would not be an easy matter to account for the symptoms ever ceasing, for, according to my idea of a ferment, it would never cease to act if new matter were continually added; nor could anything possibly check it but a substance immediately applied to the part, which could stop or prevent the fermentation in the new matter. But as the venereal inflammation in this species of the disease is not kept up beyond a certain time, the production of the poison cannot depend on fermentation. Fourthly, if it depended on a fermentation in the secreted matter, all venereal cases would be alike, nor would one be worse than another, except from a greater or smaller number of fermenting places. Upon this supposition, also, all cases would be equally easy of cure, for the fermentation would be equally strong in a slight case as in a bad one. It can only be fermentation in the matter after it has left the vessels.

When the venereal matter has been applied to a sore, so as to irritate, it produces a venereal irritation and inflammation. But even this does not always take place, for the common matter from the sore may remove the venereal matter applied before it can affect the sore so as to produce the venereal inflammation and suppuration there. This experiment I have made several times, and have only once produced the venereal inflammation. But if the venereal matter were capable of acting as a ferment, then it would in all cases produce venereal matter without altering the nature of the sore.

The effects produced by venereal poison appear to me to arise from its peculiar or specific irritation, joined with the aptness of the living principle to be irritated by such a cause, and the parts so irritated acting accordingly. I shall therefore consider it as a poison, which, by irritating the living parts in a manner peculiar to itself, produces an inflammation peculiar to that irritation, from which a matter is pro-

¹ This proof is defective, since gonorrhœal epididymitis is no more due to syphilitic virus than the preceding gonorrhœa is. With this exception, Hunter is right.—RICORD.

duced peculiar to the inflammation. Let us consider how far this opinion agrees with the various phenomena attending the disease.

First, the venereal matter having a greater power of irritating than common matter, conveys more the idea of irritation than of fermentation. Secondly, its producing a specific disease with specific symptoms and appearances shows that it has a specific power of irritation, the living powers necessarily acting according to that irritation. Thirdly, the circumstance of the inflammation having its stated time of appearance and termination is agreeable to the laws of the animal economy in most cases, as it is a circumstance that takes place in other diseases that have a crisis; and when the disease is longer of duration in some than in others, it is because they are much more susceptible of this kind of irritation; and there may be perhaps other concurrent circumstances. Fourthly, the venereal inflammation being confined to a specific distance, is more agreeable to the idea of a specific irritation than that of a fermentation. Fifthly, we have a farther proof of this opinion from the appearance of the disease being translated from one part of the body to another, as in the case of the swelled testicle, in which the discharge is often stopped or otherwise affected. Sixthly, the discharge often stops from the constitution being attacked by a fever, and returns after some days or weeks, or not at all, according to the continuance of the fever. Now we can plainly see why the fever should put a stop to the discharge, as the disposition produced by it in a part is very different from that disposition which formed the matter; we can plainly see why the same disposition to form matter should often return; but how that return should be venereal, upon the principles of fermentation, we do not see. Seventhly, the production by art of an irritation of another kind, which is not specific, removes the specific irritation; now an irritation of another kind cannot prevent the fermentation from going on, but may destroy the venereal irritation. Eighthly, the circumstance of particular parts of our body being much more readily irritated than others by the venereal poison, when in the constitution, shows that it arises from an irritation, and that of a particular kind.¹ Ninthly, we know of no other

¹ The French translator of this work remarks that "in order to understand Hunter's views, we must not lose sight of the fact that he often uses the word *irritation* in a very different sense from that in which it is almost universally understood at the present day. With him, this word expresses the *immediate effect* of every vital action, whether morbid or not; in other words, that modification of the tissues which is immediately interposed between the application of a cause and the fulfilment of its action. For example, let a man be attacked with fever after being exposed to the influence of a certain miasm; Hunter expresses this fact by saying that the miasm introduced into the constitution excites an irritation, which produces action, and this action is fever. *Irritation*, produced by a miasm, is nothing else than the organic modification, whatever its nature is, which is the immediate result of the application of the morbid agent, which is followed by the morbid action called *fever*."

"Take another example; Hunter admits that the venereal virus is absorbed and mingles with the general circulation; then he says: 'It irritates to action;' in other words, it produces an *irritation* or a *stimulation*, which causes a morbid action. Thus, Hunter's *irritation* is that state of the tissues which immediately precedes every action in the system, and which is produced by the direct influence of the exciting cause of the action. This explanation is important, lest a theoretical value should be attached to certain of Hunter's phrases, which they do not possess."—ED.

animal that is susceptible of the venereal irritation, for repeated trials have shown that it is impossible to give it to a dog, a bitch, or an ass.¹ It is much easier to suppose that a dog or an ass is not susceptible of many irritations of which the human body is susceptible, as we find to be the case in all other specific diseases and most poisons, than that the matter of the human body is not susceptible of a change, of which that of the dog or ass is not.²

This argument is still farther supported by comparing the venereal poison with other morbid poisons. The animal poison productive of the hydrophobia seems to be produced by a particular irritation affecting certain parts, which shows that if the body, or any part of the body, is irritated, it takes a disposition to act in a peculiar manner, and that this mode of action is capable of secreting such juices as will throw another animal into the same action. In the hydrophobia, the throat and its glands are particularly affected; and how the saliva should become of such a nature from the same kind of matter being either carried into the constitution or perhaps only by the general sympathy of the constitution with a local infection, and more particularly with the parts about the throat, is not easily to be accounted for, without a supposition either that the absorbed poison circulating can produce a specific constitutional action capable of affecting the throat and glands there, just as the poison of the smallpox affects the skin, or that the circulating poison has power to affect or irritate the glands of the mouth only, or that those parts only are capable of immediately sympathizing with the part irritated, as the muscles of the lower jaw are when they produce the locked jaw.

If this theory be just, it explains why epidemical diseases, arising from particular seasons, particular constitutions of air, &c., irritate in such a manner as to produce a fever, the effluvia of which shall irritate in the same manner; for it is not in the least material how the original irritation arises; it is only necessary that there should exist in the animal a power of acting according to the stimulus given by that irritation.

¹ I have repeatedly soaked lint in matter from a gonorrhœa, chancre, and bubo, and introduced it into the vagina of bitches, without producing any effect. I have also introduced it into the vagina of asses, without any effect. I have introduced it under the prepuce of dogs without any effect. I have also made incisions and introduced it under the skin, and it has only produced a common sore. I have made the same experiments upon asses, with the same result.

² The intrinsic nature of the venereal virus is certainly unknown, and also the intimate modifications which it causes in the tissues which it affects and which reproduce it. It is indisputably true that it does not owe its origin to any alteration which the secreted pus undergoes, but to a peculiar state of the tissues. Thus, if you excise a chancre and remove the whole ulcerated surface, you sometimes see a new chancre succeed the first, although you may have cut in the non-suppurating tissues; provided, however, that your section was not made at too great a distance from the part which was first contaminated.

I have seen, as Hunter did, suppurating blistered surfaces bathed with virulent pus from a neighboring chancre without becoming infected, or any change taking place in the nature of the secretion.—RICORD.

CHAPTER II.

THE MODE OF VENEREAL INFECTION.

EVERY infectious disease has its peculiar manner of being caught; and among mankind there is generally something peculiar in the way of life, or some attending circumstance, which exposes them at one time or other to contract such diseases, and which, if avoided, would prevent their propagation. The itch, for instance, is generally caught by a species of civility, the shaking of hands; therefore, the hand is most commonly the part first affected. And as the venereal infection is generally caught by the connection between the sexes, the parts of generation commonly suffer first. From this circumstance, people do not suspect this disease when the symptoms are anywhere else, while they always suspect it in every complaint of those parts.

In the lower class of people, one as naturally thinks of the itch when there is an eruption between the fingers, as in young men of the venereal disease whose genitals are affected; but as every secreting surface, whether cuticle or not cuticle (as was explained before), is liable to be infected by the venereal poison when it is applied to it, it is possible for many other parts besides the genitals to receive this disease. Therefore, it appears in the anus, mouth, nose, eyes, ears, and, as has been said, in the nipples of women who suckle children affected by it in their mouths, which children have been infected in the birth from the diseased parts of the mother.

[RICORD.—The infection of nurses by children, and children by nurses, is perhaps one of the most interesting questions connected with the propagation of syphilis, and one which we are called upon to answer every day.

I believe, with Hunter, that children can communicate only the primary affection (chancre), which they may contract either during delivery or after birth. Since the first edition of this work, no incontestable observation to the contrary has appeared; and M. Cullerier, Surgeon to the Lourcine Hospital, has lately read an interesting paper before the Academy of Medicine, in support of this opinion.]

CHAPTER III.

OF THE DIFFERENT FORMS OF THE DISEASE.

THE venereal poison is capable of affecting the human body in two different ways; locally, that is, in those parts only to which it is first applied; and constitutionally, that is, in consequence of the absorption of the venereal pus which affects parts while diffused in the circulation.

Between the first and second kind, or the local and constitutional,¹ certain intermediate complaints take place in the progress of absorption; these are, inflammations and suppurations, forming what are called buboes, in which the matter is of the same nature as that of the original disease.

When the matter has got into the constitution, and is circulating with the blood, it there irritates to action. There are produced from that irritation many local diseases, as blotches on the skin, ulcers in the tonsils, thickening of the periosteum and bones.

The local, or first kind, is what I have called *immediate*, arising immediately upon the application of venereal pus. Of this kind there are two sorts, seemingly very different from one another. In the first, there is a formation of matter without a breach of the solids, called a gonorrhœa; in the second, there is a breach in the solids, called a chancre. Neither of these two ways in which the disease shows itself is owing to anything peculiar in the kind of poison applied, but to the difference in the parts contaminated.²

The readiness with which the parts run into violent action, in this species of inflammation, is greater or less, according to the nature of the parts affected, which perhaps does not arise from any specific difference in the parts, but is according to the common principle of sensibility and irritability; for we find that the vagina is not so much disposed to inflammation in this disease as the urethra³ is in the same sex, because it is not so sensible. However, it is possible that there may be some specific disposition to irritation and inflammation in the urethra, in man; and what would incline me to think so is that this canal is subject to be more frequently out of order than any other, producing a great variety of symptoms.

¹ I have called this form of the disease constitutional; yet it is not strictly so, for every complaint in consequence of it is truly local,* and is produced by the simple application of the poison to the parts.

² See Ricord's addition on page 70.

³ Hunter's statement is not strictly true. Contrary to Swediaur's opinion, I have maintained with Bell, and others, that urethral gonorrhœa in women is more common than is generally supposed; still, daily experience proves that vaginitis is far more common.—RICORD.

* "Local;" yes, but under the influence of a constitutional infection, which does not consist in a circulation of the virulent pus in substance; otherwise, it would still always be inoculable.—RICORD.

§ 1. *Varieties in Different Constitutions.*

This disease, when it appears in the form either of a gonorrhœa or a chancre, differs very much in the violence of its symptoms in different people. In some it is extremely mild, in others extremely violent. When mild, it is generally simple in its symptoms, having but few, and those of no great extent, being much confined to the specific distance; but when violent, it becomes more complicated in its symptoms, having a greater variety, and extending itself beyond the specific distance. This does not arise from any variety in the specific virtue of the poison, but from a difference in the disposition and mode of action of the body, or parts of the body, some being hardly susceptible of this or any irritation, others being very susceptible of it, and of every other irritation, so as to readily run into violent action.

The venereal irritation, however, does not always follow these rules; for I have known young men, in whom a sore from common accident has healed up readily, yet the irritation attending a gonorrhœa has been violent, and a chancre has inflamed and spread itself with great rapidity, and even has mortified. On the other hand, I have known young men, in whom a sore from common violence has been healed with great difficulty, yet when they had contracted a gonorrhœa or chancre, the disease has been mild and easily curable.

In particular people it is either mild or severe, for the most part, uniformly. In the first stated dispositions it is not invariably so; but then I believe there is some indisposition at the time. I have known several gentlemen who had their gonorrhœas so slight in common, that they frequently cured themselves. But it has so happened that a gonorrhœa has been remarkably severe, and has obliged them to apply for assistance; but then they were soon attacked with the symptoms of a fever; and when the fever has gone off, the symptoms of the gonorrhœa have immediately become mild. I may now also observe, that when the disease is in the form of a lues venerea, different constitutions are differently affected. In some its progress is very rapid, in others it is very slow.

CHAPTER IV.

OF THE LUES VENEREA BEING THE CAUSE OF OTHER DISEASES.

EVERY animal may be said to have natural tendencies to morbid actions, which may be considered as predisposing causes; and these may be called into action whenever the immediate cause takes place, which may be such as to have no connection with these tendencies, and cannot therefore be considered as the cause of the disease. One disease excites another, and therefore is supposed to be the sole cause of it. Thus, slight fevers, or cold, smallpox, and measles, become frequently the immediate cause of scrofula; and certain derangements of the na-

tural actions of the body often bring on the gout, agues, and other diseases; but these diseases will be always more or less, according to the constitution and parts; and the constitutions will differ according to circumstances, which may be numerous; two of these, however, will be local situation and age.

In this country, the tendency to scrofula arises from the climate, which is in many a predisposing cause, and only requires some derangement to become an immediate cause and produce the whole disease.

The venereal disease also becomes often the immediate cause of other disorders, by calling forth latent tendencies to action. This does not happen from its being venereal, but from its having destroyed the natural actions, so that the moment the venereal action and disposition have terminated, the other takes place; and I have seen in many cases the tendency so very strong that it has taken place before the venereal has been entirely subdued; for, by pursuing the mercurial course, the symptoms have grown worse; but by taking up the new disposition, and rendering it less active than the venereal, the venereal has come into action anew; and these effects have taken place alternately several times. In such cases it is a lucky circumstance when the two modes of treatment can be united; but where they act in opposition it is very unfortunate. If the venereal disease attacks the lungs, although that disposition may be corrected, consumption may ensue; and in like manner where the bones are affected, or the nose, scrofulous swellings or fistula lachrymalis may be the consequence, though the disease may have been cured.

Many of the diseases arising from this source appear to be peculiar to such causes, and seem to be formed out of the constitution, the disease, and method of cure. It is therefore difficult to say of what nature such a disease may be; but it will in general have a particular tendency from the constitution; and if we are acquainted with the general tendency of a constitution, we are to suspect that as the strongest cause, and that the disease will partake more of it than the other. In this country, these complaints have most commonly a scrofulous tendency, and are often truly scrofulous, the disease partaking more of that disposition than any other.¹

Parts have also their peculiar tendency to diseases, which are stronger than those of the constitution at large, and when injured they will of course fall into the morbid action arising from such tendencies. Therefore, when parts have had their natural actions destroyed by a venereal irritation, those tendencies will be brought into action; and, therefore, the diseases arising from the tendencies of such parts are to be kept in view. They will be assisted likewise by local situation and age.

In particular countries, and in young people, the tendency to scrofula will be predominant; therefore buboes in them will more readily become scrofulous. In old people they may form cancers; and when

¹ What Hunter says here is entirely confirmatory of my note on pages 34-35.—RICORD.

in parts of the body which have a particular tendency to cancer, that disease will more readily take place.

The want of knowledge and of attention to this subject has been the cause of many mistakes; for whenever such effects have been produced in consequence of the venereal disease, it has immediately been blamed, and not only as a cause, but it has been supposed to be the disease itself. This is an inference natural enough to those who cannot see that a variety of causes are capable of producing one effect; or, in other words, that where the predisposing cause is the same, a variety of immediate causes may produce the same action. It shows great ignorance, however, to suppose the venereal disease can be both the predisposing and immediate cause.

When the venereal disease attacks the urethra, it often becomes itself the predisposing cause of abscesses and many other complaints; when it attacks the outside of the penis, forming chancres, they often ulcerate so deep as to communicate with the urethra, producing fistula in the urethra, and often a continued phimosis.

In describing diseases, which, like the venereal disease, admit of a great variety of symptoms, we should keep a middle line, first giving the most common symptoms of the disease in each form, then the varieties which most commonly occur, and last of all the most uncommon; but it will not be easy to take notice of every possible variety. Therefore, when a variety occurs not mentioned, it is not to be supposed that the author is leading his readers astray, or is unacquainted with the disease at large. If his general principles are just, they will help to explain most of the singularities of the disease.

PART II.

CHAPTER I.

OF GONORRHŒA.

WHEN an irritating matter of any kind is applied to a secreting surface, it increases that secretion, and changes it from its natural state (whatever that be) to some other. This, in the present disease, is pus.

When this takes place in the urethra, it is called a gonorrhœa; and as it arises from the matter being applied to a non-cuticular surface which naturally secretes some fluid, it is of no consequence in what part of the body this surface is; for if in the anus, it will produce a similar discharge there, and a similar effect on the inside of the mouth, nose, eyes, and ears. It is conceived by some that gonorrhœas may take place without the above-mentioned immediate cause, that is, that they may arise from the constitution; if so, they must be similar to what is supposed to be venereal ophthalmia. But, from the analogy of other venereal affections proceeding from the constitution, I very much suspect the existence of either the one or the other; for when the poison is thrown upon the mouth, throat, or nose, it produces ulcers, and not an increased secretion like a gonorrhœa. But we never find an ulcer on the inside of the eyelids in those ophthalmiæ; and gonorrhœas in the urethra are too frequent to proceed from such a cause.

Till about the year 1753, it was generally supposed that the matter from the urethra in a gonorrhœa arose from an ulcer or ulcers in that passage; but from observation it was then proved that this was not the case.¹

It may not be improper to give here a short history of the discovery that matter may be formed by inflammation without ulceration. In the winter 1749, a child was brought into the room used for dissection, in Covent Garden, on opening of whose thorax a large quantity of pus was found loose in the cavity, with the surface of the lungs and the pleura furred over with a more solid substance similar to coagulable lymph. On removing this from those surfaces, they were found entire. This appearance being new to Dr. Hunter, he sent to Mr.

¹ See Ricord's note on page 54.

Samuel Sharp, desiring his attendance; and to him it also appeared new. Mr. Sharp afterwards, in the year 1750, published his *Critical Inquiry*, in which he introduced this fact: "That matter may be formed without a breach of substance;" not mentioning whence he had derived this notion. It was ever after taught by Dr. Hunter in his lectures. We, however, find writers adopting it without quoting either Mr. Sharp or Dr. Hunter. So much being known, I was anxious to examine whether the matter in a gonorrhœa was formed in the same way. In the spring of 1753, there was an execution of eight men, two of whom I knew had at that time very severe gonorrhœas. Their bodies being procured for this particular purpose, we were very accurate in our examination, but found no ulceration. The two urethras appeared merely a little bloodshot, especially near the glans. This being another new fact ascertained, it could not escape Mr. Gataker, ever attentive to his emolument, who was then attending Dr. Hunter's lectures, and also practising dissection under me. He published, soon after, in 1754, a treatise on this disease, and explained fully that the matter in a gonorrhœa did not arise from an ulcer, without mentioning how he acquired this knowledge; and from that time successive writers have repeated that doctrine. Since the period mentioned above I have constantly paid particular attention to this circumstance, and have opened the urethra of many who at the time of their death had a gonorrhœa, yet have never found a sore in any; but always observed that the urethra, near the glans, was more bloodshot than usual, and that the lacunæ were often filled with matter; I have, indeed, seen an instance of a sore a little within the urethra, but this sore was not produced by any ulceration of the surface, but from an inflammation taking place, probably in one of the glands, which produced an abscess in the part, and that abscess opened its way into the urethra. The very same sore opened a way through externally at the frænum, so that there was a new passage for the urine. Indeed, the method of curing a gonorrhœa might have shown that it could not depend upon a venereal ulcer, for there is hardly an instance of a venereal ulcer being cured by anything but mercury, escharotics excepted.¹ We know, however, that most gonorrhœas are curable without mercury, and, what is still more, without any medical assistance; which, I believe, is never the case with a chancre. This doctrine, that a gonorrhœa does not depend on ulcers, was first taught publicly by Dr. Hunter, at his lectures, in the year 1750; but he did not attempt to account for it.

[RICORD.—It was believed for a long time that the discharge in gonorrhœa was composed only of pus. Hence, Mayerne (*Syntagma praxeos*, London, 1690), who attributed it to an ulceration of the canal, gave it the name of πυρροια. It is now known that these discharges consist of a mixture of pus and mucus, to which I have given the name of muco-pus; this renders the term *blennorrhagia* (βλεινα, mucus), invented by Swediaur, as incorrect as that of Mayerne, since it is no more pure mucus than pure pus.

¹ This is a mistake; for it is a well-established fact at the present day that chancres will heal without the use of mercury; consequently, the effect of mercury upon a sore is not a true test of its syphilitic nature.—Ed.

When blennorrhagic discharges, so called, resulting from the inflammation of mucous membranes, are studied with care, it is found that the more intense the inflammation is, and the deeper it penetrates into the submucous cellular tissue, the larger proportion do the pus-globules bear to the mucous element; and when the secretion comes from a neighboring abscess, or from an ulcer of the mucous membrane, the mucus may be entirely wanting.

It is astonishing that Hunter needed the case of pleurisy with false membranes, which he quotes, in order to understand how matter is secreted in the urethra. He and his followers should have been enlightened on this point by what takes place on the glans and prepuce in balanitis, and by the phenomena observed in coryza, bronchitis, and purulent ophthalmia.

In this chapter, which is so admirably calculated to prove that chancre and gonorrhœa are two different diseases, we see what vain efforts Hunter makes to prove that the mucous membrane of the urethra is incapable of ulceration, although he gives an instance of it himself.

Like all the other mucous membranes, that of the urethra may be the seat of ulcers, under the influence either of a chancre or of a simple inflammation; and if Hunter thought that he never met with ulcerations in this canal, Astruc, Frank, Bell, Wiseman, Howard, Capuron, Spangenberg, Swediaur, Thomas Bartholin, Teytaud, Lisfranc, and myself, have found them at different depths.—RICORD.]

[EDITOR.—Cockburne, in his work, entitled *The Symptoms, Nature, Cause, and Cure of Gonorrhœa*, London, 1715, was the first to prove that gonorrhœa is not a flow of semen.

The term blennorrhagia, which is in use with the French, is preferable to gonorrhœa, but it is thought best to adopt the latter in the present translation, both to make it coincide with Hunter's use of the word, and because it is almost universally in vogue in this country. It must be understood, however, as a generic term, including not only inflammatory discharges from all the mucous surfaces of the male and female genital organs, but also discharges from any of the accessible mucous membranes of the body, when directly or indirectly dependent upon the former, or upon sexual intercourse. Hence we may speak of gonorrhœa of the urethra, of the vagina, of the uterus, of the anus, of the eye, etc.]

§ 1. *Of the Time between the Application of the Poison, and Effect.*

In most diseases there is a certain time between the application of the cause and the appearance of the effect. In the venereal disease this time is found to vary considerably, owing probably to the state of the constitution when the infection was received. Each form of the disease also varies in this respect; the gonorrhœa and chancre being earlier in their appearance after contamination than the lues venerea and of the two former, the gonorrhœa appearing sooner than the chancre. In the gonorrhœa, the times of appearance are very differ-

ent; I have had reason to believe that in some the poison has taken effect in a few hours, while in others it has been six weeks; and I have had examples of it in all the intermediate periods. So far, however, as we can rely upon the veracity of our patients (and farther evidence we cannot have), six, eight, ten, or twelve days should appear to be the most common period, though it is capable of affecting some people much sooner, and others much later. I was informed by a married gentleman, who came from the country, and left his wife behind him, that in a frolic he went to a bagnio and had connection with a woman of the town. The next morning he left her, and he had no sooner got to his lodging than he felt a moisture of the part, and upon inspection he found a beginning gonorrhœa, which proved a very troublesome one. I was told by another gentleman that he had been with a woman overnight, and in the morning the gonorrhœa appeared; and that the same happened to him twice. I was informed by a third gentleman that the discharge appeared in six and thirty hours after the application of the poison. In the above-mentioned patients the infection must have arisen from the poison applied at those stated times, as neither of these patients is supposed to have had an opportunity of receiving the infection for many weeks before.¹

These assertions from men of veracity, and where there could be no temptation to deceive, not even an imaginary one, are sufficient evidences. On the other hand, upon equally good authority, I have been informed that six weeks after the application had passed before any symptom appeared. The patient had strange and uncommon complaints preceding the running, such as unusual sensation in the parts, with most of the other symptoms of gonorrhœa, except the discharge. He had the same complaint about twelve months afterwards, and then it was four weeks from the application of the poison before it appeared, giving for some part of that time the former disagreeable sensations; but from his late experience he suspected what was coming. From this I am inclined to believe that it seldom or never lies perfectly quiet so long, and that the inflammatory state may take place for some considerable time before the suppurative; and in these cases there is less disposition for a cure, as the very disposition which forms a running is in general a salutary one, and is an intermediate step between the disease, which is the inflammation, and the cure; for in the time of suppuration a change has taken place in the vessels, producing the formation of matter. If this change should never take place, it is not certain what would be the consequence. Whether the inflammation would go off without suppuration, as in many common inflammations, I have not been able to determine, but should suspect that it would continue much longer than usual, because the parts have not completed their actions; and I also suspect that such cases always arise from some peculiarity of constitution.

[RICORD.—The incubation of contagious diseases, and especially

¹ The following case added:—

“A gentleman had a chancre, which was cured by the internal use of mercury; when the chancre was nearly well, a gonorrhœa made its appearance; this was nearly five weeks after the chancre.”—HOME.

syphilis, is generally admitted; and is even regarded as peculiar to these affections. But experimental inoculation does not permit us to admit incubation of the primary ulcers of syphilis. There is not, as has been asserted, a time intervening between the application of the cause and its first effects. The moment that the virus is deposited in the tissues under the necessary conditions for contagion to take place, its action begins and produces its phenomena with a more or less rapid evolution. In a word—as any one may convince himself by artificially inoculating a chancre—there is no more incubation after the insertion of virulent pus, under the epidermis, than after a thorn planted in the flesh; and a chancre is produced in the first case by a gradual process, just as an abscess is formed in the second, after the necessary time for suppuration. No bronchitis, pneumonia, or phlegmon arrives at the suppurative period, immediately after the action of its exciting cause.

Since gonorrhœa may be due to other causes than sexual intercourse, we should give but little weight to observations, selected to prove the existence of a period of incubation, in which the disease appears a very long time after the suspected sexual act.

There are some patients, such as Hunter himself observed, more commonly women, who, a short time after exposure, experience the premonitory symptoms of gonorrhœa. Their organs are red, hot, and swollen; the natural secretion of the parts may dry up, as in the cases which Fabre called dry gonorrhœa, or it may increase; and yet, without any pus being formed, the disease stops entirely, and often suddenly, and does not return.—RICORD.]

§ 2. *Of the Difficulty of Distinguishing the Virulent from the Simple Gonorrhœa.*

The surface of the urethra is subject to inflammation and suppuration from various other causes besides the venereal poison; and sometimes discharges happen spontaneously when no immediate cause can be assigned. Such may be called simple gonorrhœas, having nothing of the venereal infection in them; though those persons that have been formerly subject to virulent gonorrhœas are most liable to them. It is given as a distinguishing mark between the simple and the virulent gonorrhœa that the simple comes on immediately after copulation, and is at once violent; whereas the virulent comes on some days after, and gradually. But the simple is not in all cases a consequence of a man's having had connection with women; it does not always come on at once, nor is it always free from pain. On the other hand, we see many venereal gonorrhœas that begin without any appearance of inflammation, and I have been very much at a loss to determine whether they were venereal or not; for there is a certain class of symptoms common to almost all diseases of the urethra, from which it is difficult to distinguish the few that arise solely from the specific affection. I have known the urethra sympathize with the cutting of a tooth,¹ producing

¹ Natural History of the Teeth, Part II. p. 110.

all the symptoms of a gonorrhœa. This happened several times to the same patient. The urethra is known to be sometimes the seat of the gout;¹ I have known it the seat of the rheumatism. The urethra of those who have had venereal complaints is more apt to exhibit symptoms similar to gonorrhœa than the urethra of those who never had any such complaint; and it is generally in consequence of the parts having been hurt by that disease that the simple gonorrhœa comes on, which, perhaps, is also a reason why they are in some measure similar. A discharge, and even pain, attacks the urethra; and strange sensations are every now and then felt in these parts, which may be either a return of the symptoms of the venereal disease without virus, may arise as it were spontaneously, or may be a consequence of some other disease. When it happens in consequence of some former venereal gonorrhœa, it is seldom constant, and may be called a temporary gleet, ceasing for a time and then returning; but in such cases the parts seldom swell, the glans does not change to the ripe cherry color, nor does it sweat a kind of matter. Such a complaint as a discharge without virus is known to exist, by its coming on when there has been no late connection with women, and likewise by its coming on of its own accord where there had never been any former venereal complaint, nor any chance of infection. From its commonly going off soon, both in those who have had connection with women, and those who have not, it becomes very difficult in many cases to determine whether or not it is venereal; for it is often thought venereal when it really is not so; and, on the other hand, it may be supposed to be only a return of the gleet when it is truly venereal. But, perhaps, this is not so material a circumstance as might at first be supposed. These diseases, when they are a consequence of former venereal complaints, may be considered only as an inconvenience entailed on those who have had the venereal gonorrhœa. No certain cure for them is known; they are similar to the fluor albus in women.

[RICORD.—Neither a suspicious connection as an antecedent, an apparent period of incubation, the greater or less intensity of the symptoms, their duration with or without remission, the dark or greenish color of the discharge, its peculiar odor, the color of the parts affected, nor the seat of the disease, can indicate its intimate nature, or betray the exact cause to which it should be attributed. I appeal to the confession of Hunter himself, who eludes the question, as Hecker did; and I would refer especially to the recent discussion in the Academy of Medicine, in which it was evident to all candid minds that there is no virulent gonorrhœa, except that complicated with, or dependent upon, a concealed chancre, which is rigorously demonstrable by inoculation.]

§ 3. *Of the Common Final Intention of Suppuration not answering in the present Disease.*

When a secreting surface has once received the inflammatory action, its secretions are increased and visibly altered. Also, when the irrita-

¹ Essays and Observations, Physical and Literary, of Edinburgh, vol. iii. p. 425.

tion has produced inflammation and an ulcer in the solid parts, a secretion of matter takes place, the intention of which in both seems to be to wash away the irritating matter; so that it is the end of irritations to produce their own destruction, like a mote in the eye, which, by increasing the secretion of tears, is itself washed away. But in inflammations arising from specific or morbid poisons, this effect cannot be produced; for although the first irritating matter be washed away, yet the new matter formed has the same quality with the original; and therefore, upon the same principle, it would produce a perpetual succession of irritations, and of course secretions, even if there were no other cause for the continuance than its own matter. But the venereal inflammation is not kept up by the pus which is formed; but, like many other specific diseases, by the specific quality of the inflammation itself. This inflammation, however, it would appear, can only last a limited time, the symptoms peculiar to it vanishing of themselves, by the parts becoming less and less susceptible of irritation. This circumstance is not peculiar to this particular form of the venereal disease; it is, perhaps, common to almost every disease that can affect the human body. From hence it will appear, that the consequent venereal matter has no power of continuing the original irritation; and indeed if this were not the case there would be no end to the disease.

As the living principle, in many diseases, is not capable of continuing the same action, it also loses this power in the present, when the disease is in the form of a gonorrhœa; and the effect is at last stopped, the irritation ceasing gradually. This cessation will vary according to circumstances; for if the irritated parts are in a state very susceptible of such irritations, in all probability their actions will be more violent and continue longer; but in all cases, the difference must arise from the difference in the constitution, and not from any difference in the poison itself.

The circumstance of the disease ceasing spontaneously only, happens when it attacks a secreting surface, and when a secretion of pus is produced; for when it attacks a non-secreting surface, and produces its effects there, that is, an ulcer, the parts so affected are capable of continuing the disease, or this mode of action, forever, as will be taken notice of when we shall hereafter consider chancre. But this difference between spontaneous and non-spontaneous cure seems to depend more on the difference in the two modes of action than on the difference in the two surfaces; for when the disease produces an ulcer on a secreting surface, which it often does from the constitution, as on the tonsils, it has no disposition to cure of itself; nor in the urethra, if ulcers are formed there, would they heal more readily than when formed in any other part.

The common practice proves these facts; we every day see gonorrhœas cured by the most ignorant; but in chancre, or the lues venerea, more skill is necessary. The reason is obvious; gonorrhœa cures itself, whilst the other forms of the disease require the assistance of art.¹

¹ RICORD.—When we read attentively what Hunter says on the differences existing between gonorrhœa and the ulcerous form of venereal disease, in respect to the symptoms, progress, termination, and even the treatment of the two affections, we are astonished to

It sometimes happens that the parts which become irritated first get well, while another part of the same surface receives the irritation, which continues the disease, as happens when it shifts from the glans to the urethra.

From this circumstance of all gonorrhœas ceasing without medical help, I should doubt very much the possibility of a person getting a fresh gonorrhœa while he has that disease, or of his increasing the same by the application of fresh matter of its own kind.¹ And this observation holds in all the forms of the disease; for it has been proved that the application of the matter from a gonorrhœa to a bubo does not in the least retard the cure of that bubo; nor does the matter of a chancre applied to a bubo, nor the matter of a bubo applied to a chancre, produce any bad effect; though if venereal matter is applied to a common sore it will often produce the venereal irritation.² By all which I am led to believe that the venereal matter formed in a gonorrhœa does not assist in keeping up that gonorrhœa; for it is only an application of matter, the poison and effects of which are exactly similar to the effects upon the solids already produced; and that nothing could increase or continue the effect but something that is capable of increasing the disposition of the parts themselves to such inflammation, or of making them more susceptible of it. We find, besides, that a gonorrhœa may be cured while there is a chancre, and *vice versa*; now, if fresh venereal matter were capable of keeping up the disease, no gonorrhœa could ever get well while there is this supply of venereal matter.³ From all this it is reasonable to suppose that such a surface

find him persist in the idea that they recognize only one and the same specific cause, and that they differ only in their seat and their form, and may produce the same constitutional effects. We are especially astonished, if we admit, as Hunter did himself, the possible existence of urethral chancres, to account for the constitutional symptoms in some apparent cases of gonorrhœa.—RICORD.

¹ This assertion is too contrary to daily observation to allow it to pass without refutation. The contrary may be proved, viz., the more numerous attacks of gonorrhœa have been, the more easily the disease is contracted anew; and the succeeding affection is developed with the more ease and rapidity in proportion to the traces remaining of the previous attack. It is well known that the most common cause of relapse, especially in gonorrhœa, is the too hasty repetition of sexual intercourse before the cure is perfect, and even before convalescence commences.—RICORD.

² If these remarks are understood literally, they may lead to sad mistakes. It is indeed true that pus from a gonorrhœa, which is not a virulent affection, can have no effect on a chancre, any more than on any other wound. Likewise, pus from a chancre applied to an open virulent bubo, adds nothing to the sore; but pus from the same bubo, placed in contact with a chancre undergoing cicatrization, will make it relapse into the stage of virulent ulceration.—RICORD.

³ When treating of pus, in my lectures, I observed that I was inclined to believe that no matter, of whatever kind, can produce any effect upon the part that formed it; nor do I believe that the matter of any sore, let it be what it will, ever does or can do any hurt to that sore; for the parts which formed the matter are of the same nature, and cannot be irritated by that which they produced, except extraneous matter is joined with it. The gland which forms the poison of the viper, and the duct which conveys it to the tooth, are not irritated by the poison; and it would appear from Abbé Fontana's experiments, that the viper cannot be affected by its own poison. Vide *Traité sur la Venin de la Vipère*, par M. F. Fontana, vol. i. p. 22. If what I have now advanced is true, wiping or washing away matter, under the idea of keeping the parts clean, is in every case absurd.

[RICORD.—Pus has, perhaps, no injurious effect on the part which secretes it, so long as it does not become putrid after its secretion. But, as I have said before, if fresh irritating

of an animal body is not capable of being irritated by its own matter; nor is it capable of being irritated beyond a certain time; and, therefore, if fresh venereal matter were continued to be applied to the urethra of a man having a gonorrhœa, that it would go off just as soon as if no such application had been made, and get as soon well as if great pains had been taken to wash its own matter away. The same reasoning holds good in chancres.

I carry this idea still farther, and assert that the parts become less susceptible of the venereal irritation; and that not only a gonorrhœa cannot be continued by the application of either its own or fresh matter, but that a man cannot get a fresh gonorrhœa, or a chancre, if he applies fresh venereal matter to the parts when the cure is nearly completed, and continues the application ever after, or at least at such intervals as are within the effect of habit. I can conceive that in time the parts may become so habituated to this application as to be insensible of it; for by a constant application the parts would never be allowed to forget this irritation, or rather never become unaccustomed to it; and therefore this supply of fresh matter could not affect the parts so as to renew the disease till they first recovered their original and natural state, and then they would be capable of being affected again.

This opinion is not derived from theory only, but is founded on experience and observation. A man, immediately after having suffered a gonorrhœa, shall have frequent connections with women of the town, and that for years successively, without being infected; yet a fresh man shall contract it immediately from the very same woman; and if the first-mentioned man were to be out of the habit of this irritation for some time, he then would be as easily infected as the other. Where this habit is not so strong as to prevent altogether the parts from being affected, still it will do it in part; and it is a strong proof of this that most people have their first gonorrhœa the most severe, and the succeeding ones generally become milder and milder, till the danger of infection almost vanishes.¹

matter be applied to a gonorrhœal surface while it is healing, the disease will resume the acute stage; and, in the same way, a fresh application of pus from a progressing chancre to another chancre which is about cicatrizing, will reproduce a virulent ulcer.

In opposition to what Hunter says on the harmlessness of letting virulent pus remain on the ulcers which secrete it, and on the inutility of lotions and cleanliness, I would recall to mind the bad effects which are universally admitted to result from the retention of simple pus in many abscesses, especially when the air penetrates into the sinuses, where the pus stagnates; and also the irritating properties which pus acquires by decomposition, and the changes brought about by putrefaction. I would especially insist on the greater ravages produced by chancres confined within a narrow prepuce, whose surface is constantly bathed with virulent matter; and, above all, on what takes place in an inoculated pustule, which extends rapidly when it is not evacuated, or when the succeeding ulcer is allowed to cover itself with a crust which confines the pus.

The comparison which Hunter makes between the poison of a viper and virulent pus, is not fair; there is all the difference between them that there is between physiological and morbid phenomena. The gall-bladder is not irritated by the bile, nor the bladder by the urine; but if these fluids penetrate into the cellular tissue, they produce grave results.—RICORD.]

¹ RICORD.—Without repeating what I said above, I will add that, what Hunter regards as a general rule, is only an exception, which we shall consider hereafter. We find many more patients who complain of not being able to touch a woman without a return of their disease, than we find in the opposite condition. Most men, who are pre-

This seems to be explained by the following facts: A married man, who had had a communication with his wife only for several years, slept with a woman with whom he had formerly cohabited. She gave him a severe gonorrhœa, and declared that she was not conscious of being diseased. He put himself and her under my care; and while they were going on with their cures they still continued their intercourse, which I readily allowed. He got well, and it was supposed she got well also. The intercourse was continued between them for many months after, without any mischief received on his side, or any suspicion of remaining disease on hers. At last this connection was broken off, and she formed another attachment. She no sooner formed this new attachment than she gave her new lover a gonorrhœa; she now flew to me for a cure, and declared that she had no connection but with the two gentlemen before mentioned, and therefore that the present disease must be the same for which I had attended her formerly. Her second lover was not a patient of mine; but I gave her medicines, which she very much neglected to take. Her lover continued his connection, as the first had done, for several months after he had got well, without any farther infection from her. But, unfortunately, her first lover returned about a twelvemonth after; and thinking himself secure, as she lived in peace with the present, renewed his acquaintance with her, and but once; the consequence, however, was a gonorrhœa.

Had the woman the gonorrhœa all this time? And what was the reason why those gentlemen did not catch the disease, except after that the acquaintance had been interrupted for some time? Was it the effect of habit, by which the parts lost their susceptibility of that irritation?

The case of a young woman from the Magdalen Hospital is a striking proof of this, as far as circumstances can prove a fact. She was received into that house, and continued the usual time, which is two years. The moment she came out she was picked up by one who was waiting for her with a post-chaise to carry her off immediately. She gave him a gonorrhœa.

This opinion of parts being so habituated to this irritation as hardly to be affected by it is strengthened by observing that in the gonorrhœa the violent symptoms shall often cease, and the disease shall still continue, spinning itself out to an amazing length, with no other symptoms than a discharge; yet that discharge shall be venereal. This I

vented by a foolish confidence, or by their good-nature, from accusing women who have made them sick again, attribute to their first attack all those which follow; and this idea is so general that some men believe in a relapse even after an interval of years; but this is, in most cases, only a fancy.

It is true that the more attacks of gonorrhœa the same person has, the less pain they produce; but it does not follow on that account that they are absolutely less severe. They may occupy as large an extent of surface, give rise to a secretion as purulent and as abundant; be just as contagious, last as long, and generally longer, than the first, which was only attended with more pain. Here, as we see, habit has no influence on the action of the cause, which, in most cases, acts as energetically the second as the first time; but the repetition of the inflammation in the same part, tending, from that very repetition, primarily or secondarily to a chronic form, deadens the sensibility, and diminishes or annuls the pain, which is not a necessary symptom of every inflammation.—RICORD.

have frequently seen; and the following is an abstract of a singular case of this kind:—

A gentleman had connection with a woman of the town, and received a venereal gonorrhœa in the beginning of April, 1780. He at first could hardly believe it to be venereal, as he had kept the woman in the country, where she had scarcely ever been out of his sight; but the violent pain in making water, great running, chordee, and swelled testicle convinced him that it was venereal. When the cure was going on tolerably well, and he had got the better of one swelled testicle, the other began to swell; however, all the symptoms gradually disappeared, except the chordee, hardness of the epididymis, and a small gleet, which was slimy. On the 12th of June he went into the country; while he was in the country the chordee went off, and the hardness of the epididymis entirely disappeared; but still a slimy gleet remained, although but trifling.

September the first, he married a young lady, and endeavoring to enter the vagina, he found great difficulty, which brought on a return of the chordee, and an increased discharge. On the 10th, she began to complain of heat and pain, and of a difficulty and frequency in making water; and when she made water there was forced out some matter; she had also a dull heavy pain, and a sense of weight at the bottom of her belly and round her hips, with great soreness of the parts when she sat. These symptoms had been preceded by an itching about the orifice of the vagina.

By taking a mercurial pill, and rubbing the parts with mercurial ointment, in about eight days the violence of the symptoms abated. They were now allowed to cohabit; but whenever they came together the pain which she suffered was excessive. The parts were washed with a solution of corrosive sublimate and sugar of lead, and anointed with mercurial ointment, which applications being continued for some time, the soreness went off. He was treated medically, and afterwards all was well.

Here was a venereal gonorrhœa contracted about the beginning of April; all the symptoms had disappeared by the first of June, and there only remained some of the consequences, such as chordee, hardness of the epididymis, and a discharge of a little slimy mucus, which could only be observed in the morning. In a short time, the chordee and hardness in the epididymis had entirely gone off, and merely the small discharge of mucus, which appeared only in the morning, remained; yet three months after he communicated the disease to his wife.

I was consulted in the following case by the surgeon who attended. July 13th, 1783, a person had connection with a woman of the town; the 30th, that is, seventeen days after, a gonorrhœa came on, which was violent. He took mercurial pills and gentle purges. In twelve days the violent symptoms abated, and about the 4th of September the discharge was stopped. On the 9th it began to appear again, but only lasted a few days; and would come and go in this way sometimes every two days, often six or seven days. On the 28th of September he had connection with his wife, while he had a small discharge. The

9th of October he had connection again; and three days after she complained of heat in making water, with a discharge and other symptoms of gonorrhœa, which were violent. About the latter end of October her complaints were almost removed, some only of the symptoms appearing and disappearing till January, 1784, when he had connection with her to try whether she could give it him, viz., three months after the second connection; and in fourteen days after this he had all the symptoms of a gonorrhœa. April 29th, he was not perfectly well, having a discharge, with a pain in the perineum; and she also had a discharge. If this last attack, in January, 1784, in him, was a gonorrhœa, then of course she must have had it; and also of course he must have lost his in the intermediate time, between the 9th of October, 1783, and January, 1784; for if he had it also then, it could not have produced any effect upon him.

It was impossible to say whether they had now the infection or not, for any trials upon themselves would prove but little, except one of them only had it so as to infect the other; but if both had it, no alteration could take place in either, as it could not be ascertained whether they had the disease or not; and as there were suspicious symptoms in both, when joined with all the circumstances, I agreed, with the attending surgeon, that it was most prudent to treat them as if actually affected with a gonorrhœa.

If it is true, as is asserted in the *Voyage Round the World*, that the venereal disease was carried to Otaheite, it shows that it can be long retained after all ideas of its existence have ceased; and when it is retained for such a length of time, it is most probably in the form of gonorrhœa.¹

In like manner, a venereal bubo, if it could be kept a considerable time between the point of suppuration and resolution, would become indolent from habit, continue in that point of suspension, and remain, perhaps, almost incurable. Such, I think, I have seen.

[RICORD.—All observers have established a state of *habit*, or a kind of *acclimation* (if I may be allowed the word), but we must beware of regarding habit in the absolute sense that Hunter gives it, or of explaining, by its means, all the observations which he reports in its favor.

There are men who contract runnings every time that they have connection with women during their menses, whilst others catch nothing. Leucorrhœa gives a running to some and not to others. The same woman, affected with uterine catarrh, often causes runnings, at greater or less intervals, in a man who habitually cohabits with her; in this way I have seen many *liaisons* broken and many connections given up, the parties believing that they could not get along together. In some more fortunate cases the man, becoming less susceptible, ceases to catch anything, although the woman continues in the same state; but then, as Hunter says, if any interval occur in their sexual connections, the disease reappears when they are afterwards renewed, as it may do also if the woman has new lovers.

In all these cases, though frequent exposure to the same irritation,

¹ Vide page 48.

always equally severe, may render a man less susceptible, we must yet take into consideration other circumstances. Thus, in marriage, or in a long connection with the same woman, sexual intercourse is less frequent and less passionate, and the organs are less disposed to irritation. Women, warned of the condition in which they may be caught, and which they do not like to acknowledge, are more careful, and often take precautions at their toilet, which are not always observed in new and often unexpected connections, in which a greater orgasm, and especially hasty repetitions of the act, dispose the parts to inflammation. I have seen women with leucorrhœa, who, after communicating a gonorrhœa to their lover under the influence of a new excitement, gave the same to their husbands, who had seen them with impunity up to that time. Again, though it is possible that a person may become accustomed, in a certain degree, to the causes which give rise to gonorrhœal discharges, and which women escape perhaps more frequently than men, it may be asserted that there is no immunity against the contagion of chancre unless it be a perfect integrity of the tissues.

I will not undertake, in this place, to criticize the cases which Hunter reports. Their little value will be understood from the preceding considerations.—RICORD.]

§ 4. *Of the Venereal Gonorrhœa.*

In treating of the seat, extent, and symptoms of gonorrhœa, I shall begin with such particulars as are constant, or most frequent, and take them, as much as possible, in the order they become less so, for there is a considerable variety in different gonorrhœas.

§ 5. *Of the Seat of the Disease in both Sexes.*

The seat of this disease, in both sexes, is commonly the parts of generation. In men, it is generally the urethra, though it sometimes takes place on the inside of the prepuce and surface of the glans. In women, it is the vagina, urethra, labia, clitoris, or nymphæ.¹

The disease has its seat in these parts from the manner in which it is caught. But if we were to consider the surface of contact simply in men, we should naturally suppose that the glans penis,² or the orifice of the urethra would be the first, or, indeed, the only parts affected; yet most commonly they are not; for though there are cases where

¹ The general application of the speculum to the study of venereal diseases in women, which I was the first to introduce, proves, as Brugnone previously stated, that even the womb may be the seat of gonorrhœa; it also explains, as Daran did, the frequency of leucorrhœa after apparently venereal discharges.

In respect to the seat of this disease, we should, doubtless, add the conjunctiva, the inferior portion of the rectum and the anus, the pituitary membrane, the mucous membrane of the mouth, according to some authors (which I have never observed), the external meatus auditorius, the umbilicus, and those regions where the skin may undergo a kind of mucous transformation, as the genito-crural fold, &c.—RICORD.

[Cases of gonorrhœal inflammation of the external meatus are reported by Lincke, in his *Treatise on Diseases of the Ear*; and by Mr. Harvey, in the *London Journal of Medicine*, for February, 1850.—ED.]

² Inserted—"inner surface of the prepuce, near to the glans."—HOME.

the glans is affected, and where the disease goes no farther, I believe it seldom attacks the orifice of the urethra without passing some way along that canal. How far it ever can be said to affect the prepuce only, I am not quite certain, although I believe it sometimes happens, for I have seen inflammation there, as well with as without a discharge from the urethra, which appeared to me to be venereal.¹ I have seen, in such cases, the inflammation extending into the loose cellular membrane of the prepuce, and producing a phimosis; and this inflammation I suspect to be of the erysipelatous kind.

When the disease attacks the glans and other external parts, as, for instance, the prepuce,² it is principally about the root of that body and the beginning of the prepuce, the parts where the cuticle is thinnest, and of course where the poison most readily affects the cutis; but sometimes it extends over all the glans, and also the whole external surface of the prepuce. It produces there a soreness or tenderness, with a secretion of thinnish matter, commonly without either excoriation or ulceration. I am not certain, however, that it does not sometimes excoriate those parts, for I once saw a case where almost the whole cuticle was separated from the glans.³ The patient assured me that it was venereal, and from the particular circumstances which he related, I had no reason to think his opinion ill founded. He never had had any such complaint from connection with women before that time. Perhaps the disease begins oftener on those parts than is commonly imagined, but being defended by a cuticle, they are but little susceptible of this kind of irritation; and this may be the reason why a permanent effect is not produced, and why it is often so slight as not to be observed. When the glans or prepuce, or both, suffer the venereal inflammation, it often rests there, and goes no farther, not being attended with a discharge of matter, nor pain in the urethra. This, the following case illustrates.

A young gentleman, from Ireland, slept with a woman at Bristol, and a fortnight afterwards, he had intercourse with another woman, in London, which last happened to be on a Monday, and on the Tuesday, or the day following, he observed a discharge from the end of his penis, when covered with the prepuce. On the Saturday following, he applied to me. Upon examination, I found that the running came from the inside of the prepuce, near to the glans; and the corona glandis, as also that part of the prepuce which is behind it, appeared to be in a

¹ This is a variety of external gonorrhœa to which M. Desruelles has given the name of *posthitis*.—RICORD.

² Inserted: "I believe it is principally in those patients whose glans is commonly covered with the prepuce, and ———."—HOME.

³ Excoriations and ulcerations of various depths are very common in balanitis, of which Hunter is here speaking. They appear under two different forms, which it is important to distinguish. In simple balanitis, the ulcerations are ill defined, of an irregular outline, and resemble the different phases of a blistered surface; whilst in balanitis depending upon a syphilitic eruption on the glans, or internal surface of the prepuce, the ulcerations, which appear at the same time with secondary eruptions on the skin, are clearly defined like the latter, and of a circular form. In simple balanitis, whether complicated with ulcerations or not, and in balanitis accompanying secondary symptoms, inoculation fails; this distinguishes such cases from those which are complicated with chancres, the matter of which is always inoculable.—RICORD.

tender and excoriated state, and covered with matter. He told me he had once had a gonorrhœa before, and upon being asked if it was in the same place, he said it was. Not being certain how far this might be venereal, I made the following inquiry: whether he had been subject to such excoriations before he had visited women; and his answer was that he never had; and that he had not this complaint always after coition, but only twice, as has been above mentioned, which, being uncommon, inclined him to suppose the effect to be venereal.

I suspect that when the prepuce swells, in a gonorrhœa of the urethra, producing a phimosis, which is often the case, it arises from the same disease having affected its inside, and that, not being sufficient to produce ulceration, it goes no farther. It seems probable that this inflammation is of the erysipelatous kind: a circumstance very necessary to be known in the cure.

The urethra is the part in which this form of the venereal disease is most frequent; and although the inflammation attending the disease in this part has many of the common symptoms of inflammation, yet it can hardly be called inflammatory when moderate, at least it does not constantly produce all the effects of common inflammation, though there is a tendency towards it. The parts seldom have all the characteristic symptoms; for there is no throbbing sensation; there is but little pain, except from the irritation of the urine and distension of the parts; the inflammation seldom goes deeper than the surface, and we have therefore rarely any tumefaction or thickening of the parts. It should rather seem to be an error loci on the surface of the urethra, like a bloodshot eye.

The secretion of pus with so little inflammation is perhaps owing to these parts being naturally in a state of secretion; therefore the transition from a healthy to a diseased secretion is more easily produced. It sometimes happens, however, that the parts do inflame considerably, and the inflammation goes deep into the cellular, or rather reticular, membrane of the corpus spongiosum urethræ, especially near the glans. Sometimes it extends farther along the corpus spongiosum urethræ, producing tumefaction, that is, an extravasation of the coagulable lymph, which is the common cause of chordee. It may be observed in general, that in most cases when suppuration is produced there is a decrease of inflammation. The inflammation in the reticular membrane of the surrounding parts would appear not to be always confined to the adhesive stage, for in those parts we have sometimes suppurations, especially in the perineum, which suppurations I suspect to be in the glands, as will be taken notice of hereafter.

The gonorrhœa does not always attack an urethra otherwise sound; nor does it always attack an urethra the relative parts of which are always sound. Thus we find people contracting this disease while they are affected with strictures, a syvelled prostate gland, as also diseased testicles, or such testicles as very readily run into disease, by which the malady becomes more complicated, and requires more attention in the method of cure. Sometimes such diseases are relieved by the gonorrhœa, at other times increased.

§ 6. *Of the most Common Symptoms, and the Order of their Appearance.*

Although the irritations must always begin first, yet it is not certain which of the symptoms, in consequence of that irritation, will first appear, for any one may appear singly without the others, though this is rarely the case. The first symptom, when carefully attended to, is generally an itching at the orifice of the urethra, sometimes extending over the whole glans;¹ a little fulness of the lips of the urethra: the effects of inflammation are next observable, and soon after a running appears; the itching changes into pain, more particularly at the time of voiding the urine; there is often no pain till some time after the appearance of the discharge, and other symptoms; and in many gonorrhœas there is hardly any pain at all, even when the discharge is very considerable; at other times the pain, or rather a great degree of soreness, will come on long before any discharge appears.²

There is generally, at this time, a greater fulness in the penis, and more especially in the glans, although it is not near so full as when erected, being rather in a state of half-erection. Besides this fulness, the glans has a kind of transparency, especially near the beginning of the urethra, where the skin is distended, being smooth and red, resembling a ripe cherry; this is owing to the reticular membrane, at this time loaded with a quantity of extravasated serum, and the vessels filled with blood. Near the beginning of the urethra, there is in many cases an evident excoriation, which is marked by the termination of the cuticle all around.³ The surface of the glans, also, is often in a half-excoriated state, which gives it a degree of tenderness, and there oozes out from it a kind of matter, as has been before observed.⁴ The canal of the urethra becomes narrower, which is known by the stream of the urine being smaller than common. This proceeds from the fulness of the penis in general, and from the internal membrane of the urethra being swollen by the inflammation, and also from its being in a spasmodic state. Besides these changes, the fear of the patient whilst voiding his urine assists in diminishing the stream of urine. The stream, as it flows from the urethra, is generally much scattered and broken as soon as it leaves the passage, which is owing to the internal canal having become irregular, and is not peculiar to a venereal gonorrhœa, but common to every disease of the urethra that alters the exact and natural figure of the canal, even although the irregularity is very far back. This we find in many diseased prostate glands.⁵

¹ These symptoms are most carefully observed by those who are under apprehensions of having the disease, and therefore are attentive to every little sensation about those parts.

² Added: "and extend a little way down the canal. I have known these sensations to be felt half way down the urethra."—HOME.

³ These erosions are sometimes due to urethral chancres, which are not generally recognized.—RICORD.

⁴ Added: "but this is more evident in those whose glans penis is commonly covered by the prepuce; for when denuded the cuticle becomes thicker, and is less easily irritated."—HOME.

⁵ Added: "In some instances, the first symptoms are unusual sensations in the penis, especially while making water, which come on a few days after receiving the

There is frequently some degree of hemorrhage from the urethra. This, I suppose, arises from the distension of the vessels, more especially when there is a chordee, or a tendency to one.

There are often small swellings observable along the lower surface of the penis in the course of the urethra. These, I suspect, are the glands of the urethra, so enlarged as to be plainly felt on the outside. They inflame so much in some cases as to suppurate, and, according to the laws of ulceration, the matter is brought to the skin, forming one, two, or more abscesses, along the under surface of the urethra; and some of these breaking internally, form what are called internal ulcers. I have observed in several cases a tumor on the under side of the penis, where the urethra is, which would swell at times very considerably, even to the size of a small flattened nut, inflame, and then, a gush of matter flowing from the urethra, would almost immediately subside. The discharge has continued for some time, gradually diminishing till it has entirely gone off, and the tumor has been almost wholly reduced; yet, after some months it has swelled in the same manner again, and terminated in the same way. How far these tumors, and the matter they discharge, are really venereal when they appear first, may be doubtful;¹ and it is difficult to determine this, for the patients in general have recourse to medicine immediately; but in their subsequent attacks they are certainly not venereal, for they cure themselves.

I have suspected these tumors to be the ducts or lacunæ of the glands of the urethra, distended with mucus, from the mouth of the duct being closed, in a manner similar to what happens to the duct leading from the lachrymal sac to the nose; and in consequence of the distension of the ducts or lacunæ, inflammation and suppuration come on and ulceration takes place, which opens a way into the urethra; but this opening soon closes up and occasions a return. Cowper's glands have been suspected to inflame, and hardness and swelling have been felt externally very much in the situation of them, which, coming to suppuration, have produced considerable abscesses in the perineum. These tumors break either internally or externally, and sometimes in both ways, making a new passage for the urine, called fistula in perinæo.²

infection, attended with constitutional irritability, sensations in the testicles, neck of the bladder, and anus; these continue for about ten days, when a discharge comes on, and they disappear."—HOME.

¹ They are venereal, when they are due to an urethral chancre; and not so when they depend on simple phlegmonous inflammation of the follicles of the urethra, or of the cellular tissue.

In any case, it is not well to wait for these abscesses to open themselves into the urethra.—RICORD.

² In acute gonorrhœa, true abscesses often form in the follicles of the affected mucous membrane, or in the cellular tissue. In man, these abscesses are most common at the sides of the frenum; next in order of frequency, along the spongy portion, and finally in the perineal and posterior portions of the canal. The inflammation, which produces these abscesses, does not always terminate in suppuration; and in that case, induration sometimes results, and may last an unlimited time. It is well known that Widekind thought that the previous swelling or subsequent induration was a diagnostic sign between gonorrhœa virulenta and gonorrhœa benigna; but it is evident, from what I have said elsewhere, that this induration can have no diagnostic value, except when dependent on urethral chancre.—RICORD.

A soreness is often felt by the patient all along the under side of the penis, owing to the inflamed state of the urethra. This soreness often extends as far as the anus, and gives great pain, principally in erections; yet it is different from a chordee, the penis remaining straight.

Erections are frequent in most gonorrhœas. These, arising from the irritation at the time, often approach to a priapism, especially when there is the above-mentioned soreness, or when there is a chordee.

Priapisms often threaten mortification in men; and I have seen an instance of it in a dog. The erection never subsided, and the glans penis could not be covered by the prepuce from the swelling of the bulb. The penis mortified and dropped off; the bone in it was denuded, and an exfoliation followed. As opium is of great service in priapism, there is reason to suppose the complaint is of a spasmodic nature.

§ 7. *Of the Discharge.*

The natural slimy discharge from the glands of the urethra is first changed from a fine transparent, ropy secretion to a watery, whitish fluid, and the natural exhaling fluid of the urethra, which is intended for moistening its surface, and which appears to be of the same kind with that which lubricates cavities in general, becomes less transparent; and both these secretions, becoming gradually thicker, assume more and more the qualities of common pus. In some cases of gonorrhœa, the glands that produce the slime which is secreted in consequence of lascivious ideas are certainly not affected; for I have seen cases when, after the passages had been cleared of the venereal matter by making water, the pure slime has flowed out of the end of the penis on such occasions. When this matter is more in quantity than what lubricates the urethra, it is forced out of the orifice by the peristaltic action of that canal, and appears externally.¹

The matter of gonorrhœa often changes its color and consistence, which is owing to the disposition of the parts which form it; sometimes from a white to a yellow, and often to a greenish color. These changes depend on the increase or decrease of the inflammation, and not on the poisonous quality of the matter itself; for any irritation on these parts, equal to that produced in a gonorrhœa, will produce the same appearances; and the changes in the color of the matter are chiefly observable after it has been discharged upon a cloth and become dry. The appearance upon the cloth is of various hues; in the middle, the matter is thicker, or more in quantity, and it is therefore generally of a deeper color; the circumference is paler, because

¹ That the urethra has considerable powers of action is evident in a vast number of instances; and that action is principally from behind forwards. We find that a bougie may be worked out by the action of the urethra. This action, I believe, is often inverted, as in spasmodic strangueries.

[Hunter's statement, the truth of which may be verified every day, is contrary to the late assertion of M. Amussat and others, who maintain that there is no such thing as spasmodic contractions or spasmodic strictures of the urethra.—RICORD.]

the watery or serous part of the matter has spread farther; and at the outer edge of all it is darkest; this last appearance is owing to its being only water with a little slime, in which some of the tinge is suspended, which, when dry, gives a transparency to the part that takes off from the white color of the linen. It is very probable that there is a small extravasation of red blood in all the cases where the matter deviates from the common color, and to this the different tinges seem to be owing. As this matter arises from a specific inflammation, it has a greater tendency to putrefaction than common matter from a healthy sore, and has often a smell seemingly peculiar to itself.¹

As it should appear that there is hardly a sufficient surface of the urethra inflamed to give the quantity of matter that is often produced, especially when we consider that the inflammation does in common go no farther than two or three inches from the external orifice, it is natural to suppose that the discharge is produced from other parts, the office of which is to form mucus for natural purposes, and which are, therefore, more capable of producing a great quantity upon slight irritations, which hardly give rise to inflammations. These parts, I have observed, are the glands of the urethra. In many cases where the glands have not been after death so much swelled as to be felt externally, and where I have had an opportunity of examining the urethra of those who have had this complaint upon them, I have always been able to discover that the ducts or lacunæ leading from them have been loaded with matter, and more visible than in the natural state. I have observed, too, that the formation of the matter is not confined to these glands entirely, for the inner surface of the urethra is commonly in such a state as not to suffer the urine to pass without considerable pain, and therefore, most probably, this internal membrane is also affected in such a manner as to secrete a matter.

This discharge, in common cases, should seem not to arise much farther back in the urethra than where the pain is felt, although it is commonly believed that it comes from the whole of the canal, and even from Cowper's glands and the prostate, and even what are called the *vesiculæ seminales*.² But the truth of this I very much doubt. My reason for supposing that it comes only from the surface where the pain is, are the following: If the matter arose from the whole surface of the urethra, and from the glands near the bladder, there would certainly be many other symptoms than do actually occur; for instance, if all the parts of the urethra beyond the bulb, or even in the bulb, were affected so as to secrete matter, that matter would be gradually

¹ It is a great mistake to look for a specific sign in the peculiar odor of gonorrhœal discharges, or to believe that virulent pus has a greater tendency to putrefaction than ordinary pus. I have preserved, for a very long time, specimens of pus from inoculable chancres; *mucopus* from gonorrhœas, and pus furnished by non-venereal affections, and I have observed no marked difference in them, except, perhaps, that the virulent pus continued liquid the longest. As to the difference in the smell, it is due to the peculiar seat of the secretion.—RICORD.

² These bags are certainly not reservoirs for the semen. The difference between the contents of them and the semen gave me the first suspicion of this; and from several experiments on the human body, as also a comparative view of them in other animals, I have been able to prove that they are not.

[Hunter is here mistaken.—RICORD.]

squeezed into the bulb as the semen is, and from thence it would be thrown out by jerks; for we know that nothing can be in the bulbous part of the urethra without stimulating it to action, especially when in a state of irritation and inflammation. In such a state we find that even a drop of urine is not allowed to rest there; and, also, if an injection of warm water only is thrown into the urethra as far as the bulb, the muscoli acceleratores are uneasy till they act and throw it out. Hence it is natural to suppose that if the membranous and bulbous part of the urethra, with the vesiculæ seminales, prostate, and Cowper's glands assisted in forming the matter, whenever it collected in the bulb it would probably be immediately thrown forwards by the muscles above mentioned, and we should be sensible of it every moment of the day. But such symptoms are seldom observed. Sometimes, indeed, a spasmodic contraction of these muscles occurs, which may probably arise from this cause, though it is more frequently felt immediately after the urine is discharged.

When the inflammation is violent, it often happens that some of the vessels of the urethra burst, and a discharge of blood ensues, which is in greater quantity at the close of voiding urine. This, however, happens at other times, and generally gives temporary ease. Sometimes this blood is in small quantity, and only gives the matter a tinge, as I observed when treating of the color of the discharge. The erections of the penis often stretch the part so much as to become a cause of an extravasation of blood. This extravasation generally increases the soreness at the time of emptying the bladder, and in such a state of the parts the urethra is usually sore when pressed; yet the bleeding diminishes the inflammation, and often gives ease.¹

[RICORD.—If we take the seat of the pain in urethral gonorrhœa as an absolute index of the extent of the disease, we may often be deceived. All parts of the urethra are not equally sensitive. The difference which exists in this respect between the glans and fossa navicularis, and the rest of the canal, is well known. This difference is observed not only in the absolute sensibility of the part, but also in its sympathetic sensations; hence M. Jourdan has called the fossa navicularis the *rendezvous* of urethral sympathy. When, however, the disease has progressed in extent and depth, the pain which is generally felt in all the inflamed parts during micturition, is increased in most cases by external pressure or by contact with a foreign body, such as a sound, &c.

As to the amount of suppuration, it is certainly in proportion to the greater or less intensity of the inflammation, and especially to the extent of the disease; and though neighboring parts not yet affected may yield pure mucus, which mingles with the discharge, they furnish purulent matter only when they become involved in the disease.

It would not be right to infer, as Hunter did, that in many cases

¹ Either in consequence of mechanical lesions, as Hunter observes, or from the intensity of the inflammation, discharges are often tinged with blood. The assertion has lately been made that a red bloody color in the discharge indicates that it was contracted by cohabitation with a woman during her menses. There is no need of my showing the incorrectness of this assertion.—RICORD.

gonorrhœal matter does not come from the bulb, or from parts posterior to it, because it is not thrown out by jerks.

It is easily shown, in many patients, that the gonorrhœal discharge is furnished by the posterior part of the canal; and that although it generally accumulates in the enlarged part of the canal at the fossa navicularis, especially during the upright position, yet by external pressure from behind forwards in the course of the canal, it may be derived from the perineal region. The same thing takes place here as in those cases in which the canal has in a measure lost its elasticity, and the urine continues to drop for some time after the stream has stopped, or the patient is obliged to evacuate the urethra by repeated pressure along its whole accessible extent.

Gonorrhœa commences in that point which was subjected to the exciting cause, and may extend gradually to the follicles, the cellular tissue, or to those parts which are continuous or contiguous.—RICORD.]

§ 8. *Of the Chordee.*

The chordee appears to be inflammatory in some cases, and spasmodic in others. We shall treat first of the inflammatory chordee.

When the inflammation is not confined merely to the surface of the urethra and its glands, but goes deeper and affects the reticular membrane, it produces in it an extravasation of coagulable lymph, as in the adhesive inflammation, which, uniting the cells together, destroys the power of distension of the corpus spongiosum urethræ, and makes it unequal in this respect to the corpora cavernosa penis, and therefore a curvature takes place in the time of erection, which is called a chordee. The curvature is generally in the lower part of the penis, arising from the cells of the corpus spongiosum urethræ having their sides united by adhesions.¹ Besides the effect of inflammation, when the chordee is violent, the inner membrane is, I suppose, so much upon the stretch as to be in some degree torn, which frequently causes a profuse bleeding from the urethra, that often relieves the patient, and even sometimes proves the cure. As chordee arises from a greater degree of inflammation than common, it is an effect which may, and often does, remain when all infection is gone, being merely a consequence of the adhesive inflammation.

§ 9. *Of the Manner in which the Inflammation affects the Urethra.*

In what manner the disease extends itself to the urethra is a question not yet absolutely determined. I suspect that it is communicated or creeps along from the glans to the urethra, or at least from the beginning or lips of the urethra to its inner surface; because it is impossible to conceive that any of the venereal matter from the woman can get into the canal during coition, although the contrary is commonly asserted. It is impossible, at least, that it can get so far as the common seat of the disease, or into those parts of the urethra where it very often

¹ The preceding sentence omitted.—HOME.

exists, that is, through the whole length of the canal. The following case amounts almost to a proof of this opinion.

A gentleman, on whose veracity I have an entire confidence, when in Germany, where he had not lain with a woman for many weeks, sat in a necessary-house some time. Upon arising, he found something that seemed to give the glans penis a little sharp pull, and he found a small bit of the plaster of the necessary-house sticking to it. He paid no farther attention to it at that time than merely to remove what stuck to his penis; but five or six days after, he observed the symptoms of a clap, which proved a pretty severe one. The only way of accounting for this is, that some person who had a clap had been there before him, and had left some venereal matter upon this place, and that the penis had remained in contact with it a sufficient time for the matter to dry.¹

When the disease attacks the urethra, it seldom extends farther than an inch and a half, or two inches at most, within the orifice, which distance appears to be truly specific, and what I have called the specific extent of the inflammation.²

As the cause of a gonorrhœa is commonly an inflammation, it is accompanied with pain and the formation of matter. In such a state, neither the sensations of the patient nor the actions of the parts themselves are confined to the real seat of the disease. In consequence of the neighboring parts sympathizing, a variety of symptoms are produced, many of which do not exceed what might arise from an irritable state. An uneasiness partaking of soreness and pain, and a kind of weariness, are everywhere felt about the pelvis; the scrotum, testicles, perineum, and hips become disagreeably sensitive to the patient, and the testicles often require being suspended; and so irritable are they, indeed, in such cases, that the least accident, or even exercise, which would have no such effect at another time, will make them swell. The glands of the groin are often affected sympathetically, and even swell a little, but do not come to suppuration. When they inflame from the absorption of matter, they in general suppurate. I have seen cases where the irritation has extended so far as to affect with real pain the thighs, the buttocks, and the abdominal muscles, so that the patient has been obliged to lie quiet in an horizontal position. The pain has at times been very acute, and the parts have been very sore to the touch; they have even swelled, but the swelling has not been of the inflammatory kind; for notwithstanding a visible fulness, the parts have been rather soft. I knew one gentleman who never had a gonor-

¹ This explanation would be satisfactory, if every gonorrhoid discharge were necessarily a consequence of contagion.—RICORD.

² It is to be here remarked, that specific diseases, among which I shall reckon such as arise from morbid poisons, have their specific distance or extent as one of their properties; but this can only take place where the constitution is not susceptible of erysipelas, or any other uncommon mode of action; for where there is an erysipelatous disposition, no bounds are set to the inflammation.

[Many syphilographers have attempted to assign a specific seat to gonorrhœa, as Hunter does. It is very true that some regions, which are more exposed to the action of the causes of gonorrhœa, are also more easily affected than others; but in the present state of science, it is impossible to draw the conclusion, that the disease is therefore confined to these regions, and cannot extend, or to found a diagnosis on its seat, as has often been done.—RICORD.]

rhœa but that he was immediately seized universally with rheumatic pains; this had happened to him several times. The blood at such times is generally free from the inflammatory appearance, and therefore we may suppose that the constitution is but little affected.¹

When the gonorrhœa (exclusive of the affections arising from sympathy) is not more violent than I have described, it may be called common or simple venereal gonorrhœa; but if the patient is very susceptible of such irritation, or of any other mode of action which may accompany the venereal, then the symptoms are in proportion more violent. In such circumstances we sometimes find the irritation and inflammation exceed the specific distance, and extend through the whole of the urethra. There is often also a considerable degree of pain in the perineum; and a frequent though not a constant symptom is a spasmodic contraction of the *acceleratores urinæ*, which is always attended with contractions of the *erectores muscles*. Whether these spasms arise from a secretion of matter, which being collected in the bulbous part of the urethra produces uneasiness, and excites contractions in order to its own expulsion, like the last drops of urine, I have not been able to determine. I have seen such spasms in the time of making water, from the urine irritating the parts in its passage through the urethra, and throwing the *musculi acceleratores* into contractions, so that the water has come by jerks. This kind of inflammation sometimes is considerable, goes deep into the cellular membrane, and produces tumefactions without any other effect.² In other cases it goes on to suppuration, often becoming one of the causes of fistulæ in perinæo. I have sometimes, as I have already observed, suspected Cowper's glands to be the seat of such suppurations; for I have observed externally circumscribed swellings in the situation of those glands. The small glands likewise of the bulbous part of the urethra may be affected in a similar manner; and the irritation is often extended even to the bladder itself.³

When the bladder is affected it becomes more susceptible of every kind of irritation, so that very disagreeable symptoms are often produced; it will not allow of the usual distension, and therefore the patient cannot retain his water the ordinary time; and the moment the desire of making water takes place, he is obliged instantly to make it with violent pain in the bladder, and still more in the glans penis, exactly similar to what happens in a fit of the stone. If the bladder be not allowed to discharge its contents immediately, the pain becomes almost intolerable; and even when the water is evacuated, there remains for some time a considerable pain both in the bladder and glans, because

¹ Hunter refers to gonorrhœal rheumatism, of which we shall speak hereafter.—RICORD.

² Added: "There is often a pain in the urethra after making water, in the same part in which it is usually felt while the water passes; this I believe to be the effect of the contraction of the internal membranes, which lasts for some time after the action has ceased."—HOME.

³ Added: "This happens more commonly towards the going off of the gonorrhœa."—HOME.

[It is very rare, indeed, for the bladder to become affected at the commencement of a gonorrhœa. Without being, in every case, one of the final phenomena, different degrees of the irritation most frequently occur after the disease has lasted some time.—RICORD.]

the very contraction of the muscular coat of the bladder becomes a cause of pain.

The ureters, and even the kidneys, sometimes sympathize, when the bladder is either very much inflamed, or under a considerable degree of irritation; however, this but rarely happens. I have even reason to suspect that the irritation may be communicated to the peritoneum by means of the vas deferens. This suspicion receives some confirmation from the following history: A gentleman had a gonorrhœa, which was treated in the antiphlogistic way. The discharge being in some degree stopped, a tension came upon the lower part of the belly, on the right side, just above Poupart's ligament, but rather nearer to the ilium. There was hardness and soreness to the touch, which soreness spread over the whole belly, producing rigors every third day, with a low pulse, which to me indicated a peritoneal inflammation, arising, in my opinion, from the vas deferens of that side being affected in its course through the belly and pelvis.

When the inflammation, or perhaps only the irritation, runs along the whole surface of the urethra, attacks the bladder, and even extends to the ureters and the kidneys, so as to cause a disagreeable sensation in all these parts, the disease is generally very violent, and I suspect is something of the erysipelatous kind; at least it shows an irritable sympathizing habit.

This disease sometimes produces very uncommon symptoms. A gentleman had a gonorrhœa, and when the inflammatory symptoms were abating, the urethra lost both the involuntary and voluntary powers of retaining the urine. His water came away involuntarily, nor could he stop it. I advised him to do nothing, and to wait for some time, as probably the method of cure might be more disagreeable than the disease itself, although it was very troublesome to him when in company. The complaint gradually lessened, and in time went entirely off.

§ 10. *Of the Swelled Testicle.*

A very common symptom attending a gonorrhœa is a swelling of the testicle. This, I believe, like the affection of the bladder, and many of the symptoms mentioned before, is only sympathetical, and not to be reckoned venereal, because the same symptoms follow every kind of irritation on the urethra, whether produced by strictures, injections, or bougies. It may be observed here, that those symptoms are not similar to the actions arising from the application of the true venereal matter, whether by absorption or otherwise, for they seldom or never suppurate; and when suppuration happens, the matter produced is not venereal.

The testicles seem, as it were, in many cases, rather to be acting for the urethra than for themselves, which is an idea applicable to all sympathies. Thus the swelling and inflammation appear suddenly, and as suddenly disappear, or in a few minutes go from one testicle to the other, the affection depending upon the state of the urethra, and not at all upon the part itself. A part, however, of the testicle, the epididy-

mis, assumes all the characters of inflammation, remaining swelled even for a considerable time after the inflammation has subsided.

The first appearance of swelling in the testicle is generally a soft pulpy fulness of the body of the testicle, which is tender to the touch; this increases to a hard swelling, accompanied with considerable pain. The hardest part is generally the epididymis, and principally that portion of it which is at the lower end of the testicle, as may be distinctly felt. The hardness and swelling, however, often run the whole length of that body, and form a knot at the upper part. The spermatic cord is likewise often affected, and more especially the vas deferens, which is thickened and sore to the touch. The veins of the testicle sometimes become varicose. I have seen such a state of the veins accompany a swelling of the testicle in two instances. A pain in the small of the back generally attends inflammations of the testicles of all kinds, with a sense of weakness of the loins and pelvis. The bowels generally sympathize with most complaints of the testicle; in some by colicky pains, in others by an uncommon sensation both in the stomach and intestines. Sickness is a common symptom, and even vomiting; the powers of digestion by this means are impaired, and a disposition for the accumulation of air takes place, which is often very troublesome. Here we have from the testicles a chain of sympathies, as we had in consequence of the irritation running along the whole urinary passages; first, the testicle is affected from the urethra; then the spermatic cord, the loins, intestines, stomach; and from thence in some measure the whole body.

In a case of swelled testicle, I have known the buttocks swell; but the swelling was not of the inflammatory kind, and in making water pain was felt in that part. Whether this symptom arose from the swelling of the testicle or from the same common cause, that is, the gonorrhœa, is not easily determined, although the latter supposition is the most probable.

It has been asserted, but without proof, that in cases of swelled testicles in consequence of a gonorrhœa, it is not the testicle that swells, but the epididymis. The truth is, it is both the one and the other. Any man that is accustomed to distinguish between a swelling of the whole testicle and that of the epididymis only, will immediately be sensible that in the hernia humoralis the whole testicle is swelled. The testicle assumes the same shape that it does from other causes, where we know, from being obliged to remove it, that the whole has swelled. The pain is in every part of the testicle. I have seen such swellings suppurate on the fore part, and have known several instances of adhesions between the tunica albuginea and vaginalis from such causes. This has only been discovered after death, or in the operation for a partial hydrocele. Such changes could not have taken place if the body of the testicle had not been in a state of inflammation. This inflammation of the testicle most probably arises from its sympathizing with the urethra, and in many cases it would appear to arise from what is understood by a translation of the irritation from the urethra to the testicle. Thus, a swelling of the testicle coming on shall remove the pain in making water and suspend the

discharge, which shall not return till the swelling of the testicle begins to subside; or the irritation in the urethra first ceasing, shall produce a swelling of the testicle, which shall continue till the pain and discharge return, thus rendering it doubtful which is the cause and which the effect. I have nevertheless known cases where the testicle has swelled, and yet the discharge has become more violent; nay, I have seen instances where a swelling has come on after the discharge has ceased, yet the discharge has returned with violence, and remained as long as the swelling of the testicle. Sometimes the epididymis only is affected, sometimes the vas deferens, and at other times only the spermatic cord, producing varicose veins. No reason can be assigned why one of these parts is affected more than another, and indeed the immediate cause in all is as yet unknown; for although an action in the urethra is the remote cause, yet it is still impossible to say whether it be the cessation of that action that is the cause of the swelling in the testicle, or the swelling in the testicle the cause of the cessation. It is described as arising from an irritation taking place in the mouths of the vasa deferentia. Were this the cause, it ought in general to affect both testicles at the same time; but I have seen this complaint happen as often where the inflammation has gone no farther back in the urethra than about an inch and a half or two inches as where it has extended farther; and the circumstance of the swelling shifting suddenly from one testicle to the other shows it to arise from some other principle in the animal economy.

A strangury often attends such cases of sympathy, and more frequently when the running stops than when it is continued along with the swelling of the testicle. Indeed, any sudden stoppage of the discharge gives a tendency to a strangury.¹

As singular a circumstance as any respecting the swelling of the testicle is, that it does not always come on when the inflammation in the urethra is at the height. I think it oftener happens when the irritation in the urethra is going off, and sometimes even after it has entirely ceased, and when the patient conceives himself to be quite well.

I may be allowed to remark that swellings in the testicle, in consequence of venereal irritation in the urethra, subject it to a suspicion that every swelling of this part is venereal; but from what I have said of its nature when it arises from a venereal cause, which was that it is owing to sympathy only, and from what I shall now say, that it is never affected with the venereal disease, either local or constitutional, as far as my observation goes, it is to be inferred that such suspicions are always ill-founded. This, perhaps, is an inference to which few will subscribe.²

I have known the gout produce a swelling in the testicle of the

¹ Added: "When the testicle is swelled, blood comes away with the semen; this may either be thrown out in the act of secretion or come from the bloodvessels of the urethra in the act of emission."—HOME.

² This assertion is contradicted by experience. There is an affection of the testicle which occurs so often in combination with venereal symptoms that it must be allowed to be a constitutional effect of the virus. It will be described hereafter among the secondary symptoms of lues venerea.—G. G. B.

inflammatory kind, and therefore similar to the sympathetic swelling from a venereal cause, having many of its characters. Injuries done to the testicle produce swellings; but they are different from those above mentioned, being more permanent, having the disease or cause in the part itself. Cancers and the scrofula produce swellings of the testicle; but these are generally slow in their progress, and not at all similar to those arising from an irritation in the urethra.

[RICORD.—The importance which the Academy of Medicine has attached to the affection of the testicles following gonorrhœa, and the debate which followed the memoir that I read on this subject before that learned Society, induce me to detail briefly what any observer free from prejudice may learn from every day's experience.

It seldom happens that the disease involves the scrotal organs during the first fortnight of a urethral gonorrhœa.

Balanitis, and with stronger reason other discharges foreign to the canal, have no influence on this affection. It most commonly appears during the third, fourth, fifth, or sixth week, from the commencement of a discharge, or even later. When it occurs at a later period, we generally find that the old running which preceded it has been lately revived.

It is almost always when the discharge has involved the posterior parts of the urethra that this affection takes place.

The statistics which I have had drawn up prove, contrary to the ideas generally professed by those who think that the disease is driven from the urethra into the testicles, that it is undoubtedly most frequent in patients who have had no treatment at all.

Fatigue, constipation, chastity, untimely sexual intercourse, external violence, and especially the want of a good suspensory bandage, predispose to this affection more than the use of injections, which are often wrongfully accused, unless they have been made far too irritating, and contrary to all the rules of art. Sudden changes of temperature, especially passing from heat to cold, have a great influence, and sometimes produce true epidemics of affections of this nature.

The left side appears to me to be most frequently attacked. This difference in frequency of the two sides appears to correspond to the position that patients give their scrotum, relatively to the seam of their pantaloons; those who "dress" on the left side—and they are the most numerous—have the affection on that side, and *vice versa*; so that it is that organ which is not supported by the pantaloons that is the most easily affected. But exceptions to this rule are not rare, and are explained by the action of other predisposing causes which may sometimes preponderate.

The disease extends from the urethra to the organs which secrete the semen, in two distinct ways; either by sympathy and without appreciable alteration of tissue between the urethra and the affected part of the testicle; or—and this process is the most common—gradually, by extension of the inflammation, with swelling of the tissues involved.

There is no gonorrhœal affection of the scrotal organs without swelling of the epididymis. The epididymis is the first part in which the disease appears; it is also the last to get well, or it may continue

permanently engorged. In case of inflammation by direct propagation, the vas deferens may be involved at the same time, but never alone.

This regularity in the commencement of the affection, which is very often confined to the epididymis during its whole duration, and which in every case terminates in it, should, correctly speaking, give it the name of gonorrhœal epididymitis.

It is more common to see one side alone affected than the two together or consecutively. When the inflammation passes suddenly from one side to the other, which I call see-saw epididymitis (*epididymite à bascule*), it is generally sympathetic; and when the opposite epididymis is seized, it is not uncommon for the first to return suddenly to its normal state. In primary double epididymitis the cords are almost always engorged.

In its simplest form this affection is confined, as I have said, to the epididymis alone, or to the vasa deferentia in addition; but if it is at all severe, and constitutional, or other causes favor its progress, it extends and becomes complicated. The most common complication is undoubtedly effusion into the tunica vaginalis, or hydrocele. This effusion, which M. Rochoux believed to be the principal affection, is sometimes due to a transparent serous exhalation, of a pale-yellow color, as in passive dropsy, caused by obstruction of the circulation; sometimes, on the contrary—and these are the rarer cases—it is the consequence of true inflammation of the serous membrane, and presents all the shades of color of pus, false membranes, and diluted blood, which are generally met with in serous inflammations. These differences, which may be already distinguished by the greater or less transparency of the effused fluid, are placed beyond a doubt in those cases in which the fluid is evacuated by puncture.

The effusion into the tunica vaginalis generally takes place suddenly, and often disappears in the same manner. Sometimes, however, it is produced gradually, and lasts as long as the swelling of the epididymis. It constitutes then one of the forms of chronic hydrocele.

The most common complication, next to the one just mentioned, is engorgement of the cellular tissue beneath the scrotum and around the cord. The skin is in that case no longer movable upon the subjacent parts; the vas deferens is lost in a solid cord, the component parts of which cannot be distinguished, and which is sometimes so large as to be strangulated by the tissues that it traverses. These engorgements, which under some circumstances are only cedematous, are sometimes decidedly inflammatory, and may terminate in suppuration and abscess. And, finally, the skin may be involved, and take on cedema or erysipelas.

The body of the testicle itself is certainly one of the parts most rarely involved. And yet it has been thought, and some persons think yet, that this is the principal seat of the affection, as the name of orchitis or syphilitic testicle, which many pathologists still retain, indicates. In most cases any one may convince himself of the contrary, and of the truth of my opinion, by carefully examining the affection in its different stages.

At first, there is felt only an engorged spot, of greater or less extent,

and more or less painful, situated beneath and behind the body of the testicle, and very easily recognized. When the disease progresses, as we have above described, and effusion takes place, fluctuation, more or less marked, is soon detected. This is due to the liquid contained in the tunica vaginalis, and is situated, in the great majority of cases, at the anterior part of the scrotum on the affected side, where there is frequently found, as I have pointed out, a transparency in a part of the tumor which leaves no farther doubt as to its nature. The signs furnished by an effused fluid can be mistaken for those of an inflamed testicle, only in case an excessive distension of the tunica vaginalis prevents displacement of the fluid and its *ballottement* on percussion, and changes the sensation of fluctuation into that elastic feel which the sound testicle presents. But, in that case, superficial pressure of this part of the tumor determines an entirely different pain from that which the testicle on the opposite side experiences when examined in the same way. Moreover, the tumor of the affected side is divided, in these cases, into two portions; the one hard, and situated behind; the other fluctuating or elastic, and occupying the anterior part. Again, comparing the diseased with the well side, we find that the softer portion in front is of the same size as the opposite testicle or larger. In the latter case, which is due to the effusion, if we draw off the fluid we again find the body of the testicle set into the epididymis; its form, position, and consistence precisely similar to the well organ on the opposite side. Moreover, by puncturing, in these cases of epididymitis complicated with hydrocele, we may convince ourselves that, although a large part of the tumor is due to the effusion, the remainder, constituting no inconsiderable portion of it, consists of the epididymis and surrounding cellular tissue. Whenever the testicle is swollen by inflammation, and there is true orchitis, the pain is intolerable, in consequence of the constriction exercised by the tunica albuginea. But the constant pathognomonic sign that may be verified on the dead and living subject, is the rapid induration, either general or partial, which at once deprives the organ of that elasticity, which, I may almost say, is peculiar to itself. In these cases, which are of all the most rare, if we evacuate a coexisting hydrocele, we find only a hard mass left, whose elements are more or less indefinitely blended.

Authors are not agreed as to what takes place with regard to the urethral discharge. As a general rule, epididymitis never follows a sudden suppression of the running. It is, perhaps, true, that it does not supervene during the acute and copious stage of a discharge; but the running generally does not diminish in quantity until the epididymitis has set in and made some progress, and it rarely dries up completely, unless the epididymitis takes place at a time when the gonorrhœa is decidedly on the decline. The persistence of the running, during epididymitis, even constitutes an important diagnostic sign. In the passage of the inflammation from the urethra to the epididymis, the symptoms are those of revulsion rather than metastasis.

The secretion of the semen may be increased, diminished, or suppressed; sexual desire heightened or extinguished. The semen which is discharged in nocturnal pollutions or sexual intercourse generally

preserves its normal character. Yet I have seen it in some rare cases combined with pus, and the mixture of the two did not appear to have taken place in the urethra; in other cases it is accompanied with blood, especially in a state of intimate combination, when, contrary to the general rule, the body of the testicle is involved.

Epididymitis being a local disease, and usually acute in its progress, may excite a general febrile reaction, sympathetic pains in the loins, and symptoms analogous to those of strangulated hernia, such as hicough, vomiting, and in rare cases peritonitis.

Its usual termination is by resolution; which, in the most complicated cases, commences in the superficial tissues and terminates in the deeper; the subcutaneous cellular tissue loses its œdema, and the serosity of the tunica vaginalis disappears; the induration of the cord vanishes; and when the testicle is involved it may become atrophied, whilst the epididymis remains indurated, or is the last to undergo resolution.

When suppuration supervenes, it most frequently takes place in the subcutaneous cellular tissue, next around the epididymis, and finally in the body of the testicle, in cases of orchitis. As soon as an abscess has formed, if the scrotum is not already adherent over it, it soon becomes so; it is encircled by an induration, in the centre of which fluctuation becomes well marked, and the skin overlying it is smoother and of a darker tint than the neighboring parts. The clearly defined indurated circle, the difference in the color of the skin, and the central fluctuation, are sufficient to prevent our mistaking the abscess for the testicle, which may often be recognized in its neighborhood, or for œdema, diffused engorgements, or especially for simple effusion into the tunica vaginalis.

In simple cases, the prognosis of gonorrhœal epididymitis is not grave, for its termination is almost always speedy and favorable, especially in sympathetic epididymitis. Gonorrhœal epididymitis is not a virulent affection, and its presence after a gonorrhœa is by no means an indication that syphilitic symptoms are to be feared. When suppuration takes place, the pus is not inoculable.

The gravity of this affection is only in proportion to its complications. Thus, in scrofulous individuals, it may be the accessory cause of the development or evolution of tubercular sarcocele, which, in Germany, has been wrongly considered a direct consequence of *gonorrhœa virulenta*, so called; in a cancerous diathesis it may be followed by cancer of the testicle, and in patients already infected with constitutional syphilis it may occasion true syphilitic sarcocele.

Pathological anatomy has confirmed all that careful observation at the bedside of the patient had anticipated. In simple cases, the epididymis is alone affected, of which I have shown specimens to the Academy of Medicine. In one subject, the changes of tissue (engorgement, injected bloodvessels, induration, and superficial suppuration) extended from the epididymis to the vesicula seminalis, and thence to the ejaculatory duct. I have found the tunica vaginalis, containing fluid or empty, presenting pus or false membranes. When the testicle showed any changes, it was seen that they commenced near the epi-

didymis, and that they consisted in simple cases of an effusion of plastic lymph, as Sir Astley Cooper has so well shown, together with compression or more or less complete obliteration of the vasa seminifera; but in every case the normal elasticity of the organ was entirely lost.

MM. Gaussail, Rochoux, Velpeau, etc., have lately presented facts in pathological anatomy similar to those which I have collected, but with explanations systematically different.—RICORD.]

§ 11. *Of the Swellings of the Glands from Sympathy.*

Since our knowledge of the manner in which substances get into the circulation, and our having learned that many substances, especially poisons, in their course to the circulation, irritate the absorbent glands to inflammation and tumefaction, we might naturally suppose such swellings, accompanying complaints in the urethra attended with a discharge, to be owing to the absorption of that matter, and therefore, if it be a venereal discharge, that they must also be venereal. But we must not be too hasty in drawing this conclusion, for we know that the glands will sometimes swell from an irritation at the origin of the lymphatics, where no absorption could possibly have taken place. They often swell and become painful upon the commencement of inflammation, before any suppuration has taken place, and subside upon the coming on of suppuration, because when the suppuration begins, the inflammation abates. I have known a prick in the finger with a clean sewing-needle produce a red streak all up the forearm, pain along the inside of the biceps muscle, a swelling of the lymphatic gland above the inner condyle of the humerus, and also of the glands of the armpit, immediately followed by sickness and a rigor, all which, however, have soon gone off. As it should therefore appear that the absorbent system is capable of being affected as well by irritation as by the absorption of matter, in all diseases of this system arising from local injuries attended with matter, one must always have these two causes in view, and endeavor, if possible, to distinguish from which the present affection proceeds. For in those cases arising from an irritated surface in consequence of poison, especially the venereal, it is of considerable consequence to be able to say from which of the two it arises, since it sometimes happens, although but seldom, that the glands of the groin are affected in a common gonorrhœa with the appearance of beginning buboes, but which I suspect to be similar to the swelling of the testicle, that is, merely sympathetic. The pain they give is but very trifling, when compared to that of the true venereal swellings arising from the absorption of matter, and they seldom suppurate. However, there are swellings of these glands from actual absorption of matter in gonorrhœa, and which consequently are truly venereal; and as it is possible to have such, they are always to be suspected. As they have sometimes arisen upon a cessation of the irritation in the urethra, similar to the swelling of the testicle, it has been supposed that the matter was driven, as it were, into them by unskilful treatment. From our acquaintance with the absorbing system we know that the matter can go that way; but we also know that we

have no method of driving it that way; and if we had, there is no reason why more should not be formed in the urethra. This therefore does not account for the cessation of secretion of matter in that part.

It is difficult to say what is the nature of those sympathetic diseases. They are not venereal, for they subside by the common treatment of inflammation, without the use of mercury; and I have known an instance of a swelled testicle from a venereal gonorrhœa that suppurated, and was treated by my advice as a common suppuration, and healed without a grain of mercury being given. Neither can they be called truly inflammatory, having rarely any of the true characters of inflammation, such as thickening of the parts, symptomatic fever, or sizzly blood, except in swellings of the testicle and glands. The swelling of the testicle has several peculiarities attending it; it is often very quick in its increase, and not being of the true inflammatory disposition, it requires less time for the removal of the inflammation; but even where it appears to have more of the true inflammatory action, we find that the removal of the inflammation and tumefaction takes place more rapidly than when proceeding from other causes. A swelled testicle in consequence of the radical cure of the hydrocele does not subside, after inflammation is gone, in as many weeks as the swelled testicle, in consequence of its sympathy with other parts, does in days; and probably the reason of this is, that it arises from sympathy; for an inflammation arising from real disease in a part, or from an external injury, as in the hydrocele, must always last either till the disease be removed, or the injury repaired; but that from sympathy will vary as the cause varies, which may happen very quickly; for we find a testicle swell in a few minutes, and in as little time subside; and also the swelling move suddenly from one testicle to the other. These sympathies are often peculiar to constitutions, and even to temporary constitutions, insomuch as to be in some degree epidemic; for there is often such an influence in the atmosphere as predisposes the body to this kind of irritation, and bodies so predisposed require only the immediate cause to produce the effect.

[RICORD.—Without going into all the details relative to buboes in general, which we shall consider hereafter, I may be allowed to point out some facts, which observation and experiment have taught me.

Compared with the frequency of gonorrhœa, an accompanying bubo is very rare.

It commonly appears at the outset, or during the acute stage, of a discharge.

Unless it occur in persons otherwise disposed to glandular engorgements, in consequence of a lymphatic temperament, or a scrofulous diathesis, it has little tendency to suppuration, and its resolution is generally rapid.

The greater or less degree of inflammation and pain attending a bubo, to which we would give the epithet "gonorrhœal," cannot serve to distinguish a bubo by absorption from a sympathetic bubo, as Hunter seems to think. The severity of the inflammation and pain, the duration, the mode of termination, and the influence of treatment, in

this disease, depend on collateral causes, pertaining to the individual, and foreign to the gonorrhœa, which is not here a specific cause.

A bubo accompanying gonorrhœa is never syphilitic, as Hunter supposes, unless there exist, at the same time, a chancre, of which the bubo is the consequence.

Glandular engorgements occurring during the course of a gonorrhœa, and terminating in suppuration, never furnish inoculable pus; nor, in this case, are constitutional symptoms ever observed. We shall see hereafter that buboes following the absorption of pus from a chancre, or virulent buboes so-called, furnish pus which can always be inoculated.

The explanation of those cases in which a patient has a true virulent bubo, with symptoms of gonorrhœa as the antecedent, is, that there was a chancre somewhere.—RICORD.]

§ 12. *Of the Diseases of the Lymphatics in a Gonorrhœa.*

Another symptom, which sometimes takes place in a gonorrhœa, is a hard cord leading from the prepuce along the back of the penis, and often directing its course to one of the groins, and affecting the glands. There is most commonly a swelling in the prepuce at the part where the cord takes its rise. This happens sometimes when there is an excoriation and discharge from the prepuce or glans, which may be called a venereal gonorrhœa of these parts. Both the swelling in the groin and the hard cord, we have reason to suppose, arise from the absorption of pus, and that, therefore, they are the first step towards a lues venerea; but as that form of the disease seldom happens from a gonorrhœa, I shall not take any farther notice of it in this place. However, I may remark that, from this observation of the lues venerea being seldom produced from a gonorrhœa, it should appear that a whole surface, or one only inflamed, does not readily admit of the absorption of the venereal poison; and, therefore, although the venereal matter lies for many weeks in the passage, and over the whole glans, it seldom happens that any absorption takes place.¹ I have seen a case where blood

¹ Added: "As a farther proof that these cords often arise from an inflammatory excoriation and tumefaction of the prepuce, a gentleman had a chancre on the right side, at the root of the prepuce, close to the penis, besides which there was an excoriation of the penis everywhere, with a thickening of that part. Although the chancre was on the right side, and the excoriation principally on the left, yet there was a hard cord along the left side of the penis, leading to an enlarged gland in the groin."—HOME.

[Hunter's explanation of this case may be incorrect, since we frequently see chancres on one side give rise to buboes on the opposite side, which proves that the lymphatics cross the median line. This fact has also been proved by anatomical researches, and especially by those of M. Huguier. (*Mémoires de l'Académie de Médecine*, t. xiv. et xv.)

Otherwise, I am entirely of Hunter's opinion with regard to the nature of the cords which form on the back of the penis. They are true cases of lymphitis or angeiolenitis, and not always phlebitis of the dorsal veins, as has latterly been believed. They are more rarely met with in true gonorrhœa, and are then simple cases of inflammatory lymphitis. They more commonly succeed the different varieties of chancre, and they present the same differences as the buboes which follow them.—RICORD.]

[These inflammations of the dorsal vessels sometimes give rise to chordee, in which the concavity of the arc is directed upwards towards the pubis.—ED.]

has been discharged from the urethra, and the above mentioned symptoms have come on. I at first suspected that the absorption had taken place where the vessel gave way; but as this symptom rarely happens, even where there has been a considerable discharge of blood, I am inclined to think that wounds are also bad absorbing surfaces, especially when I consider that few morbid poisons are absorbed from wounds.

§ 13. *Short Recapitulation of the Varieties in the Symptoms.*

From what has been advanced above, it must appear that the variety of symptoms in a gonorrhœa, and the difference of them in different cases, are almost endless. I shall now recapitulate a few of the most material or common varieties. The discharge often appears without any pain, and the coming on of the pain is not at any stated time after the appearance of the discharge. There is often no pain at all, although the discharge be considerable in quantity, and of a bad appearance. The pain often goes off while the discharge continues, and will sometimes return again. An itching in some cases is felt for a considerable time, which sometimes is succeeded by pain, though in many cases it continues to the end of the disease. On the other hand, the pain is often troublesome and considerable, even when the discharge is trifling, or none at all. In general, the inflammation in the urethra does not extend beyond an inch or two from the orifice; sometimes it runs all along the urethra to the bladder, and even to the kidneys; and in some cases spreads in the substance of the urethra, producing a chordee. The glands of the urethra inflame, and often suppurate; and I suspect that Cowper's glands sometimes do the same. The neighboring parts sympathize, as the glands of the groin, the testicle, the loins, and pubes, with the upper parts of the thighs and abdominal muscles. Sometimes the disease appears soon after the application of the poison, as in a few hours, at other times not till after six weeks. It is often not possible to determine whether it is venereal, or only an accidental discharge arising from some unknown cause.

It may not be improper to mention here that I have seen a chancre on the prepuce produce a pain in the urethra in making water, which most probably depended upon a sympathy similar to that by which the application of venereal matter to the glans produces a discharge from the urethra, as was observed above. If the application of venereal matter to the glans can produce a discharge from the urethra, it is possible that any acrid matter, though not venereal, may have a similar effect. The discharge from the vagina, in cases of what is called fluor albus, is sometimes extremely irritating, insomuch as to excoriate the labia and thighs; and the following history shows that it may sometimes produce effects similar to venereal matter.

Mr. and Mrs. — have been married these twenty years and upwards. She has, for many years past, been at times troubled with the fluor albus. When he has connection with her at such times, it has generally, although not always, produced an excoriation of the glans and prepuce, and a considerable discharge from the urethra, attended with

a slight pain. These symptoms commonly take a considerable time before they go off, whether treated as a gonorrhœa or as a weakness. Is this a new poison? And does it go no farther because the connection takes place only between two? What would be the consequence if she were to have connection with other men, and these with other women? Such cases, as far as I have seen, have only been in form of a gonorrhœa. They have not produced sores in the parts, nor, as far as I know, do they ever produce constitutional diseases.¹

CHAPTER II.

OF THE GONORRHŒA IN WOMEN.

THE venereal disease in the form of a gonorrhœa in women is not so complicated as in men; the parts affected are more simple, and fewer in number. But it is not so easily known in them as it is in men, because the parts commonly affected in women are very subject to a disease resembling the gonorrhœa, called *fluor albus*; and the distinguishing marks, if there are any, have not yet been completely ascertained. A discharge simply from these parts in women is less a proof of the existence of the venereal infection than even a discharge without pain in men; therefore, in general, little or no attention is paid to it by the patient herself, and we often find the venereal virus formed in those parts without any increase of the natural discharge. The kind of matter gives us no assistance in distinguishing the two diseases, for it often happens that the discharge in the *fluor albus* puts on all the appearances of the venereal matter; and an increase of the discharge is no better mark by which we can distinguish the one from the other. Pain, or any peculiarity in the sensations of the parts, is not a necessary attendant upon this complaint in women, therefore not to be looked for as a distinguishing symptom.

The appearance of the parts often gives us but little information; for I have frequently examined the parts of those who confessed all the symptoms, such as increase of discharge, pain in making water, soreness in walking, or when they were touched; yet I could see no difference between these and sound parts. I know of no other way of judging in cases where there are no symptoms sensible to the person herself, or where the patient has a mind to deny having any uncommon symptoms, but from the circumstances preceding the discharge, such as her having

¹ In fact, this was a true case of gonorrhœa, which might have been communicated to others. Most gonorrhœas arise in exactly the same way, as I have had the means of proving hundreds of times during the last twenty years. It is impossible to distinguish gonorrhœas, which are produced under such circumstances, from those which are supposed to be due to specific contagion; it is the same disease, with the same consequences, and requires the same treatment. There is no more constitutional infection in one case than in the other; and no more need of mercurial treatment, unless an infecting chancre, due to another contagion, supervene.—RICORD.

been connected with men supposed to be unsound, or her being able to give it to others, which last circumstance, being derived from the testimony of another person, is not always to be trusted to, for very obvious reasons. Thus, a woman may have this species of the venereal disease without knowing it herself, or without the surgeon being able to discover it, even on inspection. It may appear very strange that a disease which is so violent and well-marked in men should be so obscure in women; but when we consider that this poison generally produces symptoms according to the nature of the parts affected by it, it becomes an easy matter to account in some measure for this difference.

When we attend to the manner in which this disease is contracted by women, it is evident that it must principally attack the vagina, a part that is not endowed with much sensation, or action of any kind. While it is confined to the vagina, it may be compared to the same disease on the glans penis in men. In many cases, however, it extends much farther, and becomes the cause of disagreeable feelings, producing a considerable soreness in all the parts formed for sensation, such as the inside of the labia, nymphæ, clitoris, carunculæ myrtiformes, the orifice of the meatus urinarius, and often affecting that canal in its whole length. Those parts are so sore in some cases as not to bear being touched; the person can hardly walk; the urine gives pain in its passage through the urethra, and when it washes the above-mentioned parts, which can hardly be avoided. Such symptoms are not much increased at one time more than another, excepting at the time of making water, and then principally in those who have the urethra affected; for, as these parts are less exposed to circumstances of change, the increased irritation arising from such change of parts must necessarily in this sex be less. But in men the urethra, which is the part most commonly affected, has great sensibility, is capable of violent inflammation, is often distended with a stimulating fluid, and the body of the penis, urethra, and glans, stretching the passage with erections, always produce an increase of the symptoms, especially of the pain.

But as this disease frequently attacks parts more sensible than the vagina, and which are more susceptible of inflammation, as has been observed, under such circumstances women have nearly the same symptoms as men; a fulness about the parts, almost like an inflamed tonsil, a discharge from the urethra, violent pain in making water, and great uneasiness in sitting, from pressure on those parts.

The bladder sometimes sympathizes, producing the same symptoms as in men, and it is probable that the irritation may be communicated even to the kidneys. It has been asserted that the ovaria are sometimes affected in a similar manner to the testicles in men. I have never seen a case of this kind, and I should very much doubt the possibility of its existence; for we have no instance, in other diseases, of the ovaria sympathizing with those parts, or at least producing such symptoms as would enable us to determine that they did. That there do, however, uncommon symptoms now and then occur, should appear from the following case:—

A lady had all the symptoms of a venereal gonorrhœa, such as a discharge, pain and frequency in making water, or rather a continued

inclination to void it, and a heaviness approaching to pain about the hips and loins. The uncommon symptoms in this case were great flatulency in the stomach and bowels; this last symptom was most probably a sympathy with the uterus. There may possibly be sympathies therefore with the ovaria.

The inflammation frequently goes deeper than the surface of the parts; often running along the ducts of the glands, and affecting the glands themselves, so as to produce hard swelling under the surface of the inside of the labia, which sometimes suppurate, forming small abscesses, opening near the orifice of the vagina. These are similar to the inflammations and suppurations of the glands in the urethra in men. The different surfaces or parts which the disease attacks, make no distinction in the disease itself. It is immaterial whether it is a large or small surface; in one case the parts are more susceptible of this irritation than in another; but the method of cure may be more complicated.

It sometimes happens that the venereal matter from the vagina runs down the perineum to the anus, producing a gonorrhœa or chancres there.

How far the gonorrhœa in women is capable of wearing itself out, as in men, I cannot absolutely determine, but am much inclined to believe that it may, for I have known many women who have got rid of a violent gonorrhœa without having used any means to cure it; and, indeed, the great variety of methods of cure employed in such cases, all of which cannot possibly do good, though the patients get well, seems to confirm this opinion. One circumstance, which appears as curious as any, is the seeming continuance of the disease in the vagina for years; at least, we have reason to believe this, as far as the testimony of patients can be relied on; and this long continuance of it, without wearing itself out as it does sometimes in men, is probably owing to its being less violent in the vagina.¹

¹ A case is here added:—

"HOME.—The following account of a lady, having all the symptoms of gonorrhœa immediately after connection, shows how early in some cases the disease is produced; it was sent to me from Bath for my opinion upon it, drawn up by her medical attendant.

"A lady, of a delicate habit of body, great sensibility of mind, and extreme irritability of the whole nervous system, in general had enjoyed good health until her present illness, which began in the following manner: The morning after her marriage, she complained of great soreness and swelling of the pudenda, attended with a good deal of pain, and difficulty in making water; this was considered as the natural consequence of her connection, and she continued her journey in a postchaise, though in much pain, the whole day. The following morning, her complaints were much increased, and a considerable discharge came on from the parts. In this situation, she came to Bath a few days after, when I was desired to see her. I found her in an agony of distress, her husband having informed her that, from circumstances attending himself, he was apprehensive her complaints might prove venereal. Upon questioning him, I found that for some months he had had a running from the urethra, attended with heat of urine; that he had been under the care of a surgeon in the country, who had assured him his disease was not venereal; that, confiding in this assurance, he had married, not doubting that he was perfectly well, except a trifling gleet which remained still; he farther stated that, in having connection with his wife, from the natural tightness of the parts, he had not been able to penetrate; that, in the attempt, she complained of much pain, and some blood was discharged; upon examining his shirt, some discharge was observed upon it, and he still was troubled

§ 1. *Of the Proofs of a Woman having this Disease.*

It may be asked, what proof there is of a woman having a gonorrhœa when she is not sensible of having any one symptom of the disease, and none appears to the surgeon on examination? In such a case, the only thing we can depend upon is the testimony of those

with heat of urine. I was at first inclined to hope that (as women are not so easily infected with the venereal poison as men) all these complaints might be the consequence of a first connection, followed by a long and rapid journey in a postchaise; I therefore ordered an opening mixture, and desired the parts might be fomented with a decoction of poppy-heads in milk and water, and a soft poultice of bread and milk applied. Finding no advantage from the use of these means, I examined the state of the parts affected, and found there was a considerable discharge of matter, principally from the urethra, the orifice of which was much swelled and inflamed, as well as the ducts of the glands on each side the urethra; there did not appear to be any discharge from the vagina; the hymen still appeared unbroken, and very firm and fleshy; the lacunæ from Cowper's glands on each side were very much inflamed; and there was a hard tumor on one side of the hymen, which afterwards suppurated. There was no appearance of disease anywhere about the labia or nymphæ. It was treated as venereal, and she went through a course of mercury, which was persisted in for some time; the abscess above mentioned burst; her mouth grew a little tender; her complaints were so much mended that there was no doubt of a speedy and happy termination of her disorder, when she was seized with a most violent diarrhœa, which was with the utmost difficulty restrained. Mercurials of every kind were then left off; the former symptoms grew more troublesome; the heat of urine increased, and extended to the bladder, as appeared by the continuance of the pain for an hour or two after she had made water. She was now desired to rub about a drachm of mercurial ointment upon the thighs, labia, and inside of the pudenda. About this time, another abscess formed, in nearly the same situation with the former, which was opened with a lancet; this gave her much relief; the heat of urine went off in a great measure, but the discharge from the urethra still continued as much as before; she continued the mercurial frictions with great freedom during the healing of the abscess, inasmuch that her mouth was greatly affected; she then left off the ointment for a little time, and soon after, the orifice of the urethra swelled and inflamed very much, the discharge greatly increased in quantity, and there was likewise a discharge of matter from the vagina; an injection of crude mercury, rubbed down with mucilage of gum arabic till it was extinguished, and mixed with water, was ordered to be used twice or thrice a day; she had all along taken the almond emulsion with gum arabic for her constant drink, and this was continued in large quantities; she also again resumed the use of the ointment as before, by which her mouth was at times made exceedingly sore.

"The disease had now continued nearly five months; the catamenia regularly appeared ever since her first complaint; at the last return of them she was free from pain, and the discharge as little as it had been at any time during her illness, and she continued free from uneasiness during that period, but soon after its cessation the heat of urine again returned in a most violent degree, and continued for an hour or two with unabating violence; the orifice of the urethra again swelled as much as before. The discharge from the vagina at present is much the same, to which is superadded a shooting pain in almost every direction of that passage and the parts adjacent, which frequently recurs during the day. I can feel no swelling of any other part within the reach of my finger; nor does the pressure give pain in any direction. Being now fully persuaded that the venereal virus must be fully subdued, all mercurials are left off, and she uses only an injection of opium and thin starch, keeping the bowels open with a little castor oil now and then. Every fresh return of the ardor urinæ has been accompanied with a train of most distressing nervous symptoms, hysterics, and extreme dejection of spirits, and the pain is generally most violent in the night, though she drinks an astonishing quantity of diluting liquors with gum arabic, pulvis tragacanth. comp., &c., and has frequently taken opiates, from which she has certainly received relief; but as they always increase her nervous symptoms, she is greatly overcome by their use."—HOME.

[Is it possible to deceive one's self more perseveringly on the cause, nature, and treatment of the disease in this unfortunate lady? And all because a gonorrhœa must be virulent, like a chancre!—RICORD.]

whom we look upon as men of veracity. Such men have asserted that they have been affected by a woman in the situation above described, having had no connection for some months with any other woman. From this evidence it is reasonable to suppose that the disease has been caught from such women; and it should seem to put it beyond a doubt when the same woman gives the disease in this way to more than one man. The case of the woman giving the disease to two men alternately, at an interval of twelve months each time,¹ which gives a space of at least two years for the continuance of the disease, proves that its communication is almost the only criterion of its presence. The case, too, of the young woman at the Magdalen Hospital² confirms the same opinion. Yet all this does not amount to an absolute proof; for a sound woman may have had a connection with a man who had a gonorrhœa, or a man with chancres, and soon after, that is, perhaps within forty-eight hours, she may have admitted the embraces of a sound man. In such a case, it is very possible that he may receive the infection from that matter which was lodged in the vagina by the unsound man, and yet the woman may not catch the disease, for the matter may be washed away before it irritates the vagina; and this woman may be suspected of having a gonorrhœa, and apparently with great justice. A repetition of these circumstances may be the cause of many women appearing to have the disease for years without really having it. Again, I have seen a bubo come on at a time when the patient was not sensible of any disorder till that appeared. This, one would think, is an absolute proof that there may be a gonorrhœa and the patient not be conscious of it. But even this is not altogether without fallacy, for there may have been an absorption of venereal matter deposited in the vagina by some infected man, which may not have produced any irritation in that part.³

[RICORD.—As any one may convince himself from the writings of authors preceding Hunter, of Hunter himself, and of those who have followed this great master, the knowledge of gonorrhœa in women was necessarily incomplete and enveloped in mystery, until the use of the speculum enabled me to better appreciate a multitude of important circumstances connected with it.

1. *Its seat*.—Gonorrhœa may affect the vulva, the urethra, the vagina, or the uterus, either singly or all together; or again, it may occur in different combinations of these parts, such as the vulva and uterus together, or these parts in connection with the vagina, etc., which constitute so many varieties.

2. *Relative frequency of situation*.—1, the vagina; 2, the urethra; 3, the vulva; 4, the uterus. In case of combination: 1, the vulva, urethra, and vagina together; 2, the vagina and uterus; 3, the vulva, urethra, vagina, and uterus.

3. *Its extension*.—It extends from the vagina to the neighboring parts; also from the superficial and external to the deeper parts, which are the last affected and the most difficult of cure.

¹ See p. 76.

² See p. 76.

³ The last three sentences omitted.—HOME.

4. *Its commencement*.—Difficult of accurate appreciation in women, in consequence of the possible existence of previous discharges.

5. *Alterations of tissue*.—Simple redness, either circumscribed or general; more or less decided tumefaction; erosions and ulcerations, presenting the same varieties as are met with in balanitis or urethritis of the male. The follicles of the vagina are often very much developed, and present a granular, mammillated aspect, which has led me to apply to this variety the name of *psorélytrie*. The os uteri often presents granular ulcerations. These granulations, which resemble ordinary granulations, or those appearing on certain vesicated surfaces, or the granulations met with on other inflamed mucous membranes, may last a very long time; they are generally ill-defined, and may, notwithstanding what has been said on the subject, occupy indifferently the two lips of the os, or extend into the cavity of the neck. It is not very uncommon to see these granulations pass into the state of true vegetations.

These granulations are not necessarily the consequence of one specific inflammation, rather than another, as some superficial observers have supposed.

6. *Symptoms*.—All the symptoms of catarrhal inflammation, varying only according to the seat of the disease; thus, when situated in the urethra, pain in micturition; in the vulva, pain from friction and walking, tension, often severe itching, and sometimes increased sexual desire; in the vulva and vagina, pain in copulation; in the uterus, sometimes symptoms of metritis, always those of uterine catarrh.

Discharge.—Mucous at first, it soon becomes purulent; afterwards, towards its termination, or in a chronic state, it is often lactescent or creamy. It is bloody in cases analogous to those which I have mentioned in speaking of the disease in man; but any mixture with the menses must be taken into account. It is liquid, and free from viscosity, in the urethra, vulva, and vagina; glutinous, flaky, or ropy, like the white of eggs, when it is furnished by the uterus. It is alkaline in the vulva, urethra, and uterus, whilst it is acid in the vagina; it may possess a more or less marked odor, resembling the smell of some fishes in a state of decomposition, or in the deeper parts of the vagina, it may assume a very decided smell of sulphuretted hydrogen.

7. *Complications*.—Phlegmonous inflammation in the neighborhood, terminating frequently, when acute, in abscesses in the labia; inflammation and suppuration of the glands of the vulva. Chancres may coexist, situated externally, or concealed in the vagina or urethra, on the os or in the cavity of the neck; and it is only in these cases that a discharge, gonorrhœal in appearance, can give rise to chancres, as it flows over the neighboring parts or upon the anus, or can communicate chancres to persons who are exposed to infection from it.

The ovaries may be affected, as the epididymis is in man. I have had the opportunity of observing this complication, whose existence Hunter dares neither to deny nor fully to admit; and if any one will take the trouble to look for it, he will find it often enough to be convinced of the fact.

I will cite the two following cases.

A patient, in my wards, aged thirty-two, affected, for the first time, with a very acute gonorrhœa of the uterus and genital organs, was suddenly seized with swelling of the left iliac fossa. On handling the part, the tumefaction was well marked, the temperature of the part increased, and the examination occasioned much pain; nausea and a febrile movement ensued, with a full pulse. The patient lay on her back, inclined a little to the left, her thighs slightly flexed on the pelvis. The discharge from the urethra and genital organs had almost entirely disappeared. On examination per vaginam, I found the following: pressure on the neck with the index finger was not painful, but pain was excited, and a sensation of tension in the left broad ligament, when the finger, placed on the left side of the womb, thrust this organ towards the right iliac fossa; the same thing done on the other side, for the sake of comparison, caused scarcely any inconvenience; defecation, emission of urine, and in general all movements of the abdomen were painful. These symptoms, treated by antiphlogistics, disappeared about the twelfth day, and, as their intensity diminished, the discharge gradually became again more abundant; when, suddenly, the discharge decreased again, and the same series of symptoms appeared, but this time on the right side.

Again, the pupils who follow my clinique, have been able to observe a case almost precisely similar to the one just reported, in which the left side alone was affected.¹

Buboes are very uncommon; they rarely appear unless the urethra is affected.

8. *Progress*.—Acute at the outset, with a decided tendency to a chronic stage, under which form it may even commence.

9. *Duration*.—Rarely short, often indefinite.

10. *Terminations*.—The cure of gonorrhœa is rarely spontaneous, but generally follows proper treatment. There are, however, many cases which one is inclined to believe incurable, perhaps owing to the want of thought and care on the part of women, who are very different in this respect from men. Such cases are disguised under the convenient and common name of "whites."

11. *Causes*.—From all that precedes, can we infer the existence of a distinct and specific cause? I will not repeat what I have said elsewhere. If the arguments already presented be not forgotten, and to them be added what Hunter says in this chapter, any one will be convinced that different causes may produce effects analogous to those that have been thought characteristic of the action of a peculiar virus.

12. *Diagnosis*.—Nothing but the presence of a chancre, or its consequences, can absolutely prove a woman to be what Petronius called an infected female.

As we have proved, the signs given by Gault, Charleton, Van Swieten, and De Graff, dependent on the locality which they assign

¹ M. Mercier has lately proved, by several *post-mortem* examinations, that the inflammation may involve the peritoneum, and obliterate the Fallopian tubes, thus producing sterility. He inquires if this may not be the principal cause of barrenness in prostitutes; but so great a degree of importance can hardly be attached to it.—Ed.

to gonorrhœa, in the neighborhood of the meatus urinarius, are of no value.

The cessation of the gonorrhœal discharge, whilst leucorrhœa may continue, during the menstrual period, as John Fernel, Liebault, Mercatus, &c., thought, and which Baglivi regarded as an infallible sign, is also illusive.

The absence of pain, according to Pinel, and that felt in the emission of urine, according to Charleton, have no more value than the whitish and copperish stains, and the pale-red tint, given by M. Richerand.

After what I have said above, we also know what value to attach to the alterations in the tissues, with regard to which M. Lagneau entirely agrees with me.

As to the power of infection of the discharge in a female, as well as in the male, it depends rather on its acrid, irritating nature, than on anything else, and can lead to no rigorous conclusion.

Finally, if we refer to the age of the patient, to the moral presumption in the case, or to the antecedents, we are still left in the dark, as Hunter himself justly remarks; for whatever the causes of the disease may be, the symptoms produced are identical.

Hence, by means of the preceding signs, we can only establish different varieties in those inflammations in women which are reputed gonorrhœal, without approximating nearer to a knowledge of their cause; but in every case, any one can distinguish, as I have done, the discharge from a chancre, by means of the speculum or inoculation.

One fact, which I ought to mention, *giving it only that degree of importance which it deserves*,¹ is, that in every case of urethral gonorrhœa that I have met with, the woman confessed that she had caught the disease, or at least that she had been exposed to it.—RICORD.]

CHAPTER III.

OF THE EFFECTS OF THE GONORRHOEA ON THE CONSTITUTION IN BOTH SEXES.

THE disease I have been describing, both in men and women, is local, and generally confined to the part affected; yet it sometimes happens that the whole constitution is more or less affected by it. Thus we find, before there is any appearance of matter from the parts, that some patients complain of slight rigors; these are most considerable when the suppuration is late in taking place. A remarkable

¹ I have italicized M. Ricord's words, that he may not be misunderstood to lay this down as an absolute rule. M. Vidal, in his late work, represents him as making urethritis in the female an absolute diagnostic sign of contagion! It is almost needless to say that M. Ricord would be the last person in the world to entertain an opinion so contrary to his first principles.—ED.

instance of this happened in a gentleman who had the infection twice.¹ The first time he assured me that it was six weeks between the time it was possible for him to have contracted the disease, and its appearance; and that for a considerable part of that time he had often been indisposed with slight rigors, attended with a little fever and restlessness, for which he could assign no cause, nor was he relieved by the usual remedies prescribed in such cases. A violent gonorrhœa came on, and these symptoms went off, which appeared to me to explain the case. The second time it was a month from the time of infection before the gonorrhœa appeared, and for some weeks of that time he was subject to a similar indisposition, which went off as before when the running came on. Here it would appear that we have something of a suppurative fever, which, perhaps, often happens in this disease; but the inflammation being small, and the fever therefore inconsiderable, it is commonly little noticed by the patient. The above gentleman, not suspecting any such complaint in the first attack, had connection with his wife as usual, and was afraid, when the disease appeared, that he might have given it to her; but she never complained, which is a strong circumstance in confirmation of the principle laid down above, that it cannot be communicated but by matter.²

These constitutional sympathies from local specific diseases are the same, from whatever cause they proceed; they are the sympathetic effects of irritation or of violence; and it is probable that all remote sympathies are, at least in this respect, similar; for if they were similar to their cause, it is most probable that they would produce in the constitution the same kind of disease that gave rise to them.³

CHAPTER I.V.

OF THE CURE OF THE GONORRHŒA.

FROM the idea which I have endeavored to give of the venereal disease in general, namely, that, in whatever form it appears, it always arises from the same cause, it might be supposed that, since we have a specific for some of the forms of the disease, this specific should be a certain cure for every one, and therefore that it must be no difficult task to cure the disease when in the form of inflammation and suppuration upon the secreting surfaces of any of the ducts or outlets of the body. But from experience we find the gonorrhœa the most variable in its symptoms while under a cure, and the most uncertain with

¹ The case is mentioned before, p. 76.

² That this husband should have confidence in his wife, was natural and even fortunate; but that Hunter should share the confidence of the husband, was neither natural nor scientific.—RICORD.

³ What Hunter says of the effects of gonorrhœa on the constitution in both sexes is perfectly just, and conformable to rigorous observation. They are additional reasons for believing gonorrhœa and chancre two entirely different affections.—RICORD.

respect to its cure, of any of the forms of this disease; many cases terminating in a week, while others continue for months, under the same treatment.

The only curative object is to destroy the disposition and specific mode of action in the solids of the parts; and, as that is changed, the poisonous quality of the matter produced will also be destroyed. This effects the cure of the disease, but not always of the consequences.

I have already observed that this form of the disease is not capable of being continued beyond a certain time in any constitution, and that, in cases where it is violent, or lasts long, it is owing to the parts being very susceptible of such irritation, and readily retaining it. As we have no specific medicine for the gonorrhœa, it is fortunate that time alone will effect a cure; it is therefore very reasonable to suppose that every such inflammation ceases of itself; yet, although this appears to be nearly the truth, it is worthy of consideration whether medicine can be of any service in this form of the disease. I am inclined to believe it is very seldom of any kind of use, perhaps not once in ten cases; but even this would be of some consequence if we could distinguish the cases where it is of service from those where it is not. Upon the idea that every gonorrhœa cures itself, I gave certain patients pills of bread, which were taken with great regularity.¹ The patients always got well; but some of them, I believe, not so soon as they would have done had the artificial methods of cure been employed.

The methods of cure hitherto recommended, and still followed by different people of the profession, are of two kinds. They consist either of internal remedies or local applications. But in whichever of these two ways this disease is to be treated, we are always to pay more attention to the nature of the constitution, or to any attending disease in the parts themselves, or parts connected with them, than to the disease itself.

The nature of the constitution is principally to be learned from the local effects; for the local effects of this poison are so different in different people as to require great variety of treatment; but this has been too little attended to, every one endeavoring to attack the immediate symptoms, as if he had a specific for a gonorrhœa.

The first thing to be considered is the nature of the inflammation, whether violent or mild, whether common or irritable. Yet even when this is ascertained, we have not in all cases the cure in our power; for I have already observed that some people are very susceptible of this irritation who are, as it were, insensible to others; and, on the contrary, many are easily affected by common inflammation who are insensible to this. These last are rather uncommon dispositions, and

¹ We are constantly astonished at seeing Hunter confound gonorrhœa and chancres together, although he was so well aware of the differences which exist between these two diseases in respect to their pathology and therapeutics. But Hunter found certain points of resemblance, which necessarily deceived him, because he was not acquainted with masked chancres. It may be said, contrary to Hunter's views, a chancre oftener gets well alone than a gonorrhœa. A gonorrhœa almost always requires the intervention of art, and the results of treatment are very satisfactory. If we have no specifics for gonorrhœa, we have very powerful special remedies.—RICORD.

the cure being always easy, they demand little attention. When the symptoms are violent, but of the common inflammatory kind, which is to be collected from the attending circumstances, particularly the extent of the inflammation not exceeding the specific distance, the local mode of cure may be either irritating or soothing. Irritating applications in the present case may be attended with less danger than in the irritable inflammation,¹ and may alter the specific action; but to produce this effect it must be greater than the irritation from the original injury. The parts will afterwards recover of themselves, as from any other common inflammation. After all, however, I believe the soothing plan is the best at the beginning. If the inflammation be great, and of the irritable kind, no violence is to be used in the cure (for it will only increase the symptoms), unless we know that the great degree of inflammation arises entirely from a susceptibility of this irritation, and that there is no general irritability in the constitution, which seldom can be ascertained. In cases where the symptoms run high, nothing should be done that may tend to stop the discharge, either by internal or external means; for nothing would be gained thereby, as we may stop the discharge and not put an end to the inflammation. The constitution is to be altered, if possible, by remedies adapted to each disposition, with a view to alter the actions of the parts arising from such dispositions, and reduce the disease to its simple form. If the constitution cannot be altered, nothing is to be done but to allow the action to wear itself out.

When the inflammation has considerably abated, and the disease only remains in a mild form, its cure may be attempted either by internal remedies or local applications. If a local cure be attempted, violence is still to be avoided, because it may bring back the irritation. At this period gentle astringents may be applied with a prospect of success; or, if the disease has begun mildly, and there are no signs of an inflammatory disposition, either of the common kind or the irritable, in order to get rid of the specific mode of action quickly, an irritating injection may be used, which will increase the symptoms for a time, but when it is left off they will often abate or wholly disappear. In such a state of parts, astringents may be used; for the only thing to be done is to procure a cessation of the discharge, which is now the principal symptom.²

In those cases where the itching, pain, and other uncommon sensations are felt for some time before the discharge appears, I should be

¹ It is very difficult to give clear ideas of distinctions in disease when they are not marked by something permanent as to time, space, &c. I have used the term "irritable inflammation," because I think this kind of inflammation takes place more in weak, irritable habits than in others; it appears to be guided by no law that I am acquainted with. It may be called an ill-formed inflammation, as not going through the usual process to a natural termination, but continuing with little variation; and if such inflammation were to take place in the cellular membrane, it would rather produce an oedematous swelling than such as arises from the extravasation of coagulable lymph, which takes place in what I would call the true inflammation.

² Added: "It is very common when the discharge is stopped by an injection, even of a mild kind, to have an uneasy sensation in the perineum, and continued on to the bladder, producing frequency in making water, and on the return of the discharge these sensations immediately cease."—HOME.

inclined to recommend the quieting or soothing plan instead of the irritating, with a view to bring on the discharge, as that effect is a step towards a resolution of the irritation; but how far it would really be the proper plan I cannot absolutely say, not having had experience enough in such cases. One thing, however, I think I may assert from reasoning, that to use astringents would be bad practice, as they would rather tend to prevent the discharge from taking place, which might prolong the inflammation and protract the cure. In cases of stricture, or in cases of diseased testicles, I believe astringents should not be used; for we find in either case, while the discharge lasts, both complaints are relieved: therefore, in such cases, we should proceed with more caution than when all the parts are otherwise sound. If we had a specific for venereal gonorrhœa, it would still be a question whether this specific could cure the irritation before the full action had taken place.

§ 1. *Of the different Modes of Practice.—Evacuants—Astringents.*

The internal remedies commonly recommended in a gonorrhœa may be divided into evacuants and astringents. The evacuants are principally of the purgative or diuretic kind, and these not confined to any particular medicines; for every practitioner supposes that he is in possession of the best. Some use mercurial evacuants, while others carefully avoid mercury in every form. The neutral salts have been given, from the idea of their being cooling. Some of the profession have kept principally to diuretics, perhaps with two views, as evacuants acting upon the urinary passages mechanically, to wash off the venereal matter, or as specifics for the latter purpose; nitre has been given with this view; besides, it has been supposed to lessen inflammation; but its virtues in this way I very much doubt. Under these different modes of treatment the patients always get well, and the cures are ascribed by each practitioner to his own method of treatment.

To keep the body open in most cases, even when the patient is in other respects in health, must no doubt be proper; but what idea can we form of an irritation, produced all along the intestinal canal, curing a specific inflammation in the urethra? Yet there are cases where a brisk purge has been of service, and even in some has performed a cure. But I suspect that in such cases the disease has been continued by habit only, and that this practice would not have succeeded in the beginning. A gentleman had a gonorrhœa, all the symptoms of which continued for two months, and by taking at once ten grains of calomel, which purged him most violently, he was almost immediately cured. The calomel could not have acted specifically, but by a kind of derivation; that is, an irritation produced in one part cured one that subsisted in another. But, even if it should be granted that in some constitutions purges have the power of making the solids less susceptible of this irritation, it cannot be supposed they will have this effect in every case; in some constitutions they might debilitate, increase irritability, and of course increase the symptoms. These contrary effects must take place in different constitutions in which a medicine

has no specific action. On the supposition of the cure being promoted by an evacuation from the blood, what service can purging out some of the blood in form of a secretion from one part do to an inflammation of another part? On such a supposition, would not a sweat, or an increase of saliva by chewing tobacco, or stimulating the nose by snuff, all tend equally to cure a gonorrhœa? But humors have been considered as the universal cause of every disease, especially those in which pus is formed or a discharge produced, and purging having been supposed to be the cure for humors, purgatives were of course made use of in this disease; and as the patients have always been cured, the practice became generally established.

Those who recommend mercury in this form of the disease, did it most probably from the opinion that this medicine was a specific for the venereal disease in all its forms. On this supposition, we can see some reason for their practice, as it would be absorbed from the intestines, circulate through the inflamed vessels of the urethra, and thereby destroy the venereal irritation. Here we can only suppose it to act by its specific virtue; but I doubt very much of mercury having any specific virtue in this species of the disease, for I find that it is as soon cured without mercury as with it; and where this medicine is only used as a purge, or purged off the next day, and therefore allowed to act merely upon the bowels, I cannot conceive that it could have any more effect upon the venereal inflammation in the urethra than an irritation in the bowels arising from any other purgative. So little effect, indeed, has this medicine upon a gonorrhœa, that I have known a gonorrhœa take place while under a course of mercury sufficient for the cure of a chancre. Whether the gonorrhœa arose from the same infection that produced the chancre I cannot say; nor can it be easily determined in such cases. Men have also been known to contract a gonorrhœa when loaded with mercury for the cure of a lues venerea; the gonorrhœa, nevertheless, has been as difficult of cure as in ordinary cases.¹

A gentleman committed himself to my care, on the 27th of June, for the cure of two chancres and a bubo. I dispersed the bubo; but as he disliked the unction, I was obliged to substitute mercurius calcinatus daily instead of it, giving two grains in the evening and one in the morning. About the middle of July his mouth became sore, and the mercury was left off; we began its use again in a week, and he appeared to be quite well of his venereal complaints. I, however, continued the use of mercury, keeping his mouth sore; on the 16th of August, while in this state, he had a connection with a woman, both on that and the following evening, and in five days after a gonorrhœa appeared, and proved to be very violent.²

The same general observations may be made with regard to the effects of diuretics, considered as evacuants.

It is possible that specific medicines taken into the constitution (if

¹ And that, because gonorrhœa and chancre are two different diseases.—RICORD.

² Added: "Another gentleman, while under a course of mercury for the cure of chancres, had connection with a woman before he left off the use of mercury, and in two days a gonorrhœa made its appearance."—HOME.

we had such), and passing off by the urine, might act upon the urethra in their passage through it. The balsams and turpentine pass off in this way, and become specifics for many irritations in the urinary passages; but how far medicines which have the power of affecting particular parts when sound, or when under diseases peculiar to those parts, have also the power of affecting a specific irritation in these parts, I know not; but do not believe that they have any considerable power in this way. It is possible, however, that they may remove any attending irritation, although not the specific one.¹ Diuretics have, nevertheless, their advantages, for if they produce a greater quantity of water they do good; but I believe this had better be effected by simple water, or water joined with such things as will encourage the patient to drink a good deal; as tea, syrup of capillaire, orgeate, and the like.

Astringents, although often given, yet have always been condemned by those who have called themselves the judicious and regular practitioners; because, according to them, there is something to be carried off, and if that is not carried off a lues venerea is to be the consequence. This reasoning is not just; and therefore the question to be considered is, do they or do they not assist us in the cure of the gonorrhœa? I believe they do not, in any case, lessen the venereal inflammation; but certainly they often lessen the discharge. As that effect, however, does not constitute a cure, it is not necessary to produce it.

I can conceive that a combination of astringents, especially the specific astringents of those parts, as the balsams, with any other medicine which may be thought to be of service, may help to lessen the discharge in proportion as the inflammation abates; and this I have often seen, as will be explained more at length hereafter.

§ 2. *Of Local Applications—Different Kinds of Injections; Irritating, Sedative, Emollient, Astringent.*

Local applications may be either internal to the urethra, external to the penis, or both; all of which will in many cases be necessary. The internal, applied to the urethra, should seem the most likely to cure this species of disease, by coming immediately in contact with the diseased parts; for if they have any power of action, whatever that be, it must be in opposition to the venereal irritation. Therefore, we might suppose that most irritations that are not venereal would tend to a cure; but certainly this is not universally the case. If, on the contrary, the applications are such as quiet irritation, they must also be of service.

Local applications to the urethra may be either in a solid or fluid form, each of which has its advantages and disadvantages. A fluid is only a temporary application, and that of very short duration, and is similar to the washing of a sore, which is, I believe, in most cases

¹ The special action of the balsams on the urethra, is an established fact. As I have experimentally demonstrated, it is the urine, charged with the active, specific elements of copaiba and cubebs, which acts locally on the urethra.—RICORD.

unnecessary; for I imagine that matter from any sore whatever is always such as cannot stimulate that sore into any action. It can be of no consequence, therefore, whether the matter is allowed to lie upon it or not; but it being removed, the medicines are allowed to come in contact with the inflamed surface. I apprehend it is only in this way that the removal of it can be of service. The solid applications may remain a long time, and are similar to the dressings in the case of a wound. When the parts are not so much inflamed as to prevent the use of them, they would appear to have an advantage over the fluid applications by continuance; but they in general irritate immediately, in consequence of their solidity alone. These applications must be in the form of a bougie; but I should be inclined to suppose that the less use that is made of bougies, when these parts are in an inflamed state, the better, although I cannot say that I ever saw any bad effects from them in any case, when applied with caution.

Fluid applications to the inside of the urethra are commonly called injections, and, like the internal remedies, are without number; every practitioner thinking, or wishing to make the world think, that his own is the best. But, as every venereal inflammation is frequently removed under the use of injections of various kinds (which was observed with respect to internal medicines), have we not here a strong corroborating circumstance in favor of an opinion that every such complaint will in time cure itself? I think, however, it appears from practice, that an injection will often have almost an immediate effect upon the symptoms, and that, therefore, they must have some powers; and yet the kind of injection which would have the greatest specific powers I believe is not yet known; if an injection has no specific powers, it must be very uncertain in its effects, and can only be of service as far as it may be adapted to a peculiarity of constitution or parts. As injections are only temporary applications, it becomes necessary to use them often, especially in cases where they are found to be of service; they should therefore be applied as often as convenient, perhaps every hour, or even oftener; but this must be regulated, in some measure, by the kind of injection, for if it be irritating it will not be proper to use it so often, as it may be productive of bad consequences.

Many injections immediately, or at least soon after the application, remove the symptoms, and prevent the formation of matter, which has given rise to the notion of their shutting up the disease, and driving it into the constitution; but this supposed mode of producing a constitutional complaint is the reverse of what really happens, for I have already endeavored to prove that matter is the only substance in which the poison is contained, and that the formation of the poison is inseparable from the formation of matter; therefore, if we can prevent the one, the other cannot take place, and of course there can be no room for absorption; so that there can neither be any power of infecting the constitution in the same person, nor of communicating the infection to others.¹

¹ *Vide*, p. 43, what was said of the method of contracting the lues venerea.

When the discharge is an effect of present inflammation, it may be stopped by injections, though the inflammation still continue in some degree, and may afterwards be removed without the discharge ever reappearing. But I believe that by this practice little is gained, for the effect of the inflammation is not the disease which we wish to remove. However, we find that the same method which stops the discharge also removes the inflammation, although not always, and only I believe when the inflammation is slight.

I shall divide injections, according to their particular effects upon the urethra, into four kinds; the irritating, sedative, emollient, and astringent. The specific, I believe, is not yet discovered, although a mercurial injection, in some form or other, is by most people supposed to be possessed of such a power, and of course this mineral makes part of many of the injections now in use.

Irritating injections, of whatever kind, I suspect in this disease act upon the same principle; that is, by producing an irritation of another kind, which ought to be greater than the venereal, by which means the venereal is destroyed and lost, and the disease is cured, although the pain and discharge may still be kept up by the injection. Those effects, however, will soon go off when the injection is laid aside, because they arise only from its irritating qualities. In this way bougies, as well as many injections, may be supposed to form a cure; and although they increase the symptoms for the time, they never can increase the disease itself, any more than the same injection which would produce the same symptoms, if applied to the urethra of a sound man, can communicate the disease. Most of the irritating injections have an astringent effect, and prove simply astringents when mild, their irritating quality depending chiefly upon their strength.

As irritating injections do not agree with all inflammations arising from the venereal poison,¹ it may be asked, In what cases are the irritating injections to be used with advantage? This I have not been able to determine absolutely; but I think irritating injections should never be used where there is already much inflammation, especially in constitutions which cannot bear a great deal of irritation, as a previous knowledge of the disease in the same person sometimes teaches us; nor should they be used where the irritation has spread beyond the specific distance; nor where the testicles are tender; nor where, upon the discharge ceasing quickly, they have become sore; nor where the perineum is very susceptible of inflammation, and especially if it formerly has suppurated; nor where there is a tendency in the bladder to irritation, which is known from the patient having had for some time a frequency in making water. In such cases I have not succeeded with them; they not only do no good, but they often do harm, for I have seen them make the inflammation spread farther in the urethra;² and I think I have had reason to suspect that they have

¹ For I have already remarked, that the inflammation varies according to the constitution.

² It is, however, to be remarked, that this symptom is not always to be attributed to the injection, for it often happens when none has been used.

been the cause of abscesses in perinæo. But in cases that are mild, and in constitutions that are not irritable, injections often succeed, and remove the disease almost immediately. The practice, however, ought to be attempted with caution, and not, perhaps, till milder methods have failed. Two grains of corrosive sublimate, dissolved in eight ounces of distilled water, are nearly as good an injection as any of the kind. But an injection of only half this strength may be used where it is not intended to attempt a cure so quickly. If, however, the injection, even in that proportion, gives considerable pain in its application, or if it occasions a great increase of pain in making water, it should be diluted.

Sedative injections will always be of service in cases where the inflammation is considerable; not by lessening the disease itself, but by lessening the diseased action, which always allows the natural actions of the part more readily to take place. They are likewise very useful in relieving the painful feelings of the patient. Perhaps the best sedative we have is opium, as well when given by the mouth or anus, as when applied to the part affected in the form of an injection. But even opium will not agree, or act as a sedative, in all constitutions or parts. On the contrary, it has often opposite effects, producing great irritability. Lead may be reckoned a sedative, so far as it abates inflammation, while at the same time it may act as a gentle astringent. Fourteen grains of saccharum saturni, in eight ounces of distilled water, make a good sedative astringent injection.

The drinking freely of diluting liquors may, perhaps, be considered as having a sedative effect, as it in part removes some of the causes of irritation, rendering the urine less stimulating, either to the bladder when the irritation is there, or to the urethra in its passage through it; and it is possible that diluting may lessen the susceptibility of irritation. The vegetable mucilages of certain seeds and plants, and the emollient gums, are recommended; but I suspect that this practice is founded on a mechanical notion, and that none of them are of much service. I believe the advantage arises chiefly from the quantity of water that is drunk, and that if the water be joined with anything, spirits excepted, that can induce the patient to drink freely, the purpose is fully answered. I have, however, been informed by some patients, that they have thought that when the liquids they drank have been impregnated with mucilaginous substances, they have had less uneasiness in making water.

Emollient injections are the properest applications where the inflammation is very great. They are most probably useful by first simply washing away the matter, and then leaving a soft application to the part, in which way I can conceive them to be of singular service, by lessening the irritating effects of the urine. Indeed, practice proves this; for we often find that a solution of gum Arabic, milk and water, or sweet oil, will lessen the pain and other symptoms, when the more active injections have done nothing, or have seemed to have done harm.

It very often happens that the irritation is so great at the orifice of the urethra that the point of the syringe cannot be suffered to enter.

When this is the case, nothing should be done in the way of injection till the inflammation abate. Emollients may likewise be used externally, in form of fomentation.

The astringent injections can only act by lessening the discharge. They can have no specific effect upon the inflammation; but, as they must affect the actions of the living powers, it is possible they may alter the venereal disposition. They should only be used towards the latter end of the disease, when it has become mild, and the parts begin to itch. But this should be according to circumstances, and, if the disease begins mildly, they may be used at the very beginning; for by gradually lessening the discharge, without increasing the inflammation, we complete the cure, and prevent a continuation of the discharge called a gleet. Injections of this kind very probably stimulate in such a way as to make the vessels of the part contract, and probably hinder the act of secretion. We can hardly suppose that they act chemically by coagulating the juices. They will have an irritating quality if used strong, which in some measure destroys their astringency, or rather makes the parts act contrary to what they would do from the application of a simple astringent. Thus, they often increase the discharge, instead of lessening it; by which means the disease also may be cured, in the same way as by irritating injections, that is, by altering the disposition of the inflammation. When more mild they often stop the discharge, without, however, in all cases, hastening the cure; for the inflammation may still continue even longer than it otherwise would have done if the tendency to secretion had not been stopped. I have already observed, that a surface that discharges has assumed the complete action of the disease, which is one step towards a cure or termination. However, it sometimes happens that an astringent injection will cure a slight irritation in a very few days. My experience has not taught me that one astringent is much better than another.

The astringent gums, as dragon's-blood, the balsams, and the turpentine, dissolved in water; the juices of many vegetables, as oak bark, Peruvian bark, tormentil root; and perhaps all the metallic salts, as green, blue, and white vitriols, the salts of mercury, and also alum, probably all act much in the same way, although we may assert that they do not always act equally well in every gonorrhœa, for, on our changing the injection, we sometimes succeed after several others have been tried in vain.

The external applications are generally poultices and fomentations, but they can be of little service, except when the external parts, such as the prepuce, glans, and orifice of the urethra are in some degree inflamed; the last, indeed, is almost always more or less affected.

When the glands of the urethra are so much swelled as to be felt externally, the application of mercurial ointment to the part may be proper; but most probably this will be of more service after the inflammation has subsided. Indeed, mercurial ointment is often applied to all the external surfaces of those parts when in a state of inflammation, with an emollient poultice over it. I am not perfectly satisfied of the utility of this practice.

CHAPTER V.

OF THE CURE OF GONORRHŒA IN WOMEN.

IN women, the cure of the gonorrhœa is nearly the same as in men; but the disease itself is milder, and the secondary symptoms less numerous in women. This arises from there not being so many parts to be affected, and from those parts not being either of so great extent, or so liable to inflammation. Hence the cure becomes more simple.

When the disease is in the vagina only it is easily cured. Injections are the best means that can be used, and, after the use of them, it may be proper to anoint the parts, as far up as possible, with mercurial ointment,¹ and also to wash the external parts often with the injection.

If the inflammation has attacked the urethra, injections there cannot be so conveniently used, as it is almost impossible for the patient to throw an injection into that canal.

The injections recommended in the cure of men are equally serviceable here; but they may be made doubly strong, as the parts of women are not nearly so irritable as the common seat of this disease in men.

If what I have said of the disease in women be just, we must see that it will be a difficult thing to say, with any degree of certainty, when the patient is well; because whenever the symptoms have ceased, the surgeon and the patient will naturally suppose the cure to be complete; but a new trial of those parts may prove the contrary, or in cases where the disease has never affected the urethra, but only the vagina, and still more where no symptoms have ever been observed, it will be more difficult to fix the date of the cure; but general experience must direct the practitioner.

When the inflammation runs along the ducts of the glands, whether those of the mouth of the vagina or urethra, or affects the glands themselves, the same method is to be followed; in particular, the mercurial ointment is to be freely applied to the parts. If the inflammation on the mouths of the ducts is so great as to shut them up, the duct and glands will suppurate, and form abscesses; in such cases it will be necessary to open them, or enlarge the opening already formed, and dress the abscess as a chancre or bubo.

In the case of a simple running, the constitutional treatment will be taken notice of hereafter; but if any suppuration follow, the constitution is to be treated as in chancres or buboes, for most probably absorption will take place, and its effects must be guarded against.

¹ How far mercurial ointment assists in the cure, I have not been able to determine; the use of it arises more from a kind of practical analogy than real experience in such cases.

CHAPTER VI.

OF THE TREATMENT OF THE CONSTITUTION IN THE CURE OF
THE GONORRHOEA.

IN the cure of the gonorrhœa, the constitution is in some cases to be as much attended to as the parts affected, if not more; but in general this is not necessary. The knowledge of the constitution is to be obtained in a great measure from the local symptoms; and as far as the constitutional treatment can be made similar, to the local, they should correspond.

We find in many strong plethoric constitutions, where both the powers and actions are great, that the symptoms are violent. These constitutions have generally a strong tendency to fever of the inflammatory kind; and probably the most distinguishing mark of such a constitution is that of the symptoms not extending beyond the specific distance. Many medicines which might be of service in another constitution will often prove hurtful here, insomuch as to increase the very symptoms which they are meant to relieve. I have seen even opiate clysters, though they relieved at first, yet in the end produce or increase fever, and by that means increase all the symptoms. I have seen the balsam capivi, given in such cases, increase the inflammatory symptoms, probably by stopping the discharge in part, which appears to be salutary. The treatment of such a constitution, when affected with this disease, consists chiefly in evacuations, the best of which are bleeding and gentle purging. To live sparingly, and above all to use little exercise, is necessary; for although such a treatment does not lessen the venereal irritation, yet it lessens the violence of the inflammation, and allows the parts to relieve themselves. In this kind of constitution, therefore, the disease is in the end soonest cured, as there is not a tendency to a continued inflammation.

In the weak and irritable constitution the symptoms are frequently very violent, arising from great action in the parts, and often extend beyond the specific distance, the inflammation running along the urethra, and even affecting the bladder. Instead of evacuations, which would rather aggravate the symptoms than relieve them, the constitution should be strengthened, and thus it will be less susceptible of irritation in general.

I have seen patients whose constitutions were such that they were never sure of twenty-four hours' health, where the inflammation has been both considerable and extensive. I have seen evacuations tried, and the symptoms increased; but as soon as the bark was given freely they have become almost immediately mild, and without using any other medicine the patients have soon recovered. The medicine here

acted upon the constitution, destroyed the irritability, gave the parts a true and healthy sense of the venereal irritation, and brought the inflammation to that state in which it ought to be in a healthy subject, whereby the constitution was enabled to cure itself.

So capricious sometimes is this form of the disease in its cure, that the accession of an accidental fever has stopped the discharge, the pain in making water has ceased, and the gonorrhœa has finally terminated with the fever. In others, I have seen all the symptoms of the gonorrhœa cease on the accession of a fever, and return when the fever has been subdued. In some, I have seen a gonorrhœa begin mildly, but a severe fever coming on, and continuing for several days, has greatly increased the symptoms, and on the fever going off the gonorrhœa has also gone off. Although a fever does not always cure a gonorrhœa, yet, as it possibly may, nothing should be done while the fever lasts; and if it continues after the fever is gone, it is then to be treated according to the symptoms.¹

Unfortunately, there are cases where no known method lessens the symptoms; evacuations have produced no abatement; the strengthening plan has been as unsuccessful; sedatives and emollients have procured no relief; and time alone has performed the cure. In such cases the soothing plan, I believe, is the best, till we know more of the disease. Astringents should not be used, their action upon the inflamed parts being uncertain; for they often do not lessen the inflammation or the pain, although they may perhaps lessen the discharge. The turpentine, especially the balsam capivi and Canada balsam, lessen the disposition of the parts to form matter, which effect has always a salutary appearance; but as they have not at the same time the power of lessening the inflammation, they can be of little service.

Besides the various effects arising from the difference of constitution in the gonorrhœa, we find that it is considerably affected by the patient's way of life during the inflammatory state, and also by other diseases attacking the constitution at the same time. But this is common to all other diseases, for whenever we have a local disease (in which light I have considered a gonorrhœa) it is always affected by whatever affects the constitution. Most things that hurry or increase the circulation, aggravate the symptoms; such as violent exercise, drinking too much of strong liquors, eating strong indigestible food, some kinds of which act specifically on these parts, thereby increasing the symptoms more than by simply heating the body; such as peppers, spices, and spirits.

From what has been said in general, it must appear that a gonorrhœa is to be cured in the same way as every other inflammation; and it must also appear that all the methods used are only to be considered as correctors of irritation in general, and of disordered circulation. In cases that have begun mildly, where the inflammation has been but slight, or in those cases where the violent symptoms above taken notice of have subsided, such medicines as have a tendency to lessen the dis-

¹ Added: "A gentleman, while using an injection for a gonorrhœa, was seized with a vomiting and purging, which brought on a fit of the piles; they bled profusely; as soon as he recovered from these attacks he found that all the symptoms of gonorrhœa had gone away."—HOME.

charge may be given, along with the local remedies before mentioned. The turpentine, I believe, are the most efficacious. Cantharides, the salts of some metals, such as of copper, zinc, and lead, and also some earths, as alum, are strongly recommended as astringents when given internally.

Whatever methods are used for the cure, locally or constitutionally, it is always necessary to have in view the possibility of some of the matter being absorbed, and afterwards appearing in the form of a lues venerea, to prevent which I should be inclined to give small doses of mercury internally. At what time this mercurial course should begin, is not easily ascertained; but if the observation be just, that a disposition once formed is not to be cured by mercury, but that mercury has the power of preventing a disposition from forming, as was formerly explained, we should begin early, and continue it to the end of the disease, till the formation of venereal matter ceases, and even for some time after. The mercurial ointment may be used where mercury disagrees with the stomach and intestines.

This practice appears to be more necessary if the discharge has continued a considerable time, and especially if the treatment has been simply by evacuates; for, in the former case, there is a greater time for absorption; and in the latter we may suppose a greater call for it, such medicines having no effect in carrying off the virus.

To prevent a lues venerea being produced from absorption, a grain of mercurius calcinatus taken every night, or one at night and another in the morning, may be sufficient, but should be continued in proportion to the duration of the disease.

The success of this practice in any particular case can never be ascertained, because it is impossible to say when matter has been absorbed, except in cases of buboes; and where it is not known to be absorbed, it is impossible to say that there would have been a lues venerea if mercury had not been given, as very few are infected from a gonorrhoea, although they have taken no mercury. It is, however, safest to give mercury, as we may reasonably suppose it will often prevent a lues venerea, as it does when given during the cure of a chancre or bubo, where we know, from experience, that without it the lues venerea would certainly take place.

[G. G. B.—The principles which the author has laid down for the treatment of gonorrhoea, though generally correct, yet require some modification. In one or two instances he seems to have been misled by opinions, which are at the least very questionable.

It is pretty well established that a course of mercury is neither necessary nor useful in a gonorrhoea; it has no peculiar influence on the course of the disorder, and it is an error to suppose that it is necessary for the sake of preventing secondary symptoms; and this is equally true, notwithstanding the occurrence of suppuration in the glands of the urethra, or in the groin, or of breach of surface from any other cause. At the same time mercury is not particularly hurtful, except it be given in such doses and for such a length of time as would materially depress the general tone, render the urine alkaline, or induce universal irritability of the system.

From the opinion, "that no matter of whatever kind can produce any effect on the part that forms it" (see p. 74), the author has been led to disregard altogether the discharge of gonorrhœa, and to conclude that, in no degree, and under no circumstances, is the inflammation increased by its stimulus, or relieved by arresting it. This doctrine, however, seems scarcely consistent with experience. It is difficult to understand the effects of astringents in the early periods of the disorder, except on the supposition that, by arresting the discharge, they relieve the urethra from the stimulus of the virus, and thus take away the very cause of the inflammation. Again, the distinction between venereal gonorrhœas and simple purulent discharges, which are not derived from infection, is to be found less in the severity of the symptoms than in their obstinacy. The urethra is often attacked with inflammation as violent as that of gonorrhœa, in cases where there has been no possibility of infection. The discharge may be as copious, and exactly similar both in color and appearance. But in these cases the inflammatory symptoms will in a few days spontaneously subside, and the discharge will diminish with it; whereas the inflammation and discharge of a gonorrhœa shall, under similar circumstances, continue for weeks, or even months, without any visible abatement. Whence this difference, unless that in simple cases the cause is temporary, and hence the inflammation which it has excited soon exhausts itself; in gonorrhœas, a poison is generated, which acts as a perpetual stimulus, and constantly renews the excitement which originally gave rise to the disorder.

It does not appear that the plan on which a gonorrhœa should be treated differs from that which should be adopted in other inflammations of the urethra. But it must be remembered that inflammation of mucous membranes generally, of Schneider's membrane, for instance, or the inner membrane of the bladder, does not require, and is not benefited by much reduction; and that, if the constitution be rendered irritable from weakness, these inflammations often become aggravated and obstinate. This rule, which is generally applicable to mucous membranes, is more especially important in all inflammations of the bladder and urethra, perhaps because depletion tends to change the state of the urinary secretion, and to render it alkaline and irritating.

The duration and severity of a gonorrhœa depend much on the part of the urethra which is attacked by it. There is great variety in this respect. In most cases, the inflammation is confined to the neighborhood of the glans; but in many, it involves also the membranous portion, as may be shown, not only by the symptoms during life, but also by dissections after death. If the disease is limited to the last three inches of the urethra, it is seldom very violent or tedious; if it extends to the bulb and parts adjacent, the symptoms are more obstinate and distressing. Except in very rare instances, the disease commences at the glans. If it affects the membranous portion, it is by the progressive extension of the inflammation which gradually creeps up the urethra. This extension seldom occurs until the complaint

has existed for a fortnight or longer, and if the cure can be effected within that time, may almost certainly be avoided.

The true principles on which the treatment should be conducted will naturally follow from these considerations.

If the patient be seen on the first access of the disorder, when the discharge has only just appeared, and is small in quantity, before the orifice of the urethra has become turgid, and the passage has become sensible to the stimulus of the urine, the disease may often be entirely arrested by astringent injections, or by internal medicines, which have the property of acting as astringents on the urethra, such as the balsam of copaiba, or cubebs. But such a result can only be obtained when the inflammatory symptoms have scarcely commenced, and are in the slightest possible degree. After the expiration of twenty-four hours, it is often too late, and generally so at the end of forty-eight hours. When active inflammation is present, the stoppage of the discharge can seldom be effected completely, and scarcely ever permanently. It may be greatly diminished; but this diminution rather aggravates than relieves the inflammation, as it lessens a secretion which has the effect of unloading the distended vessels, and the continuance of the inflammation will in a short time inevitably reproduce the discharge as profusely as before. It is to be observed that it is necessary, for the success of this plan, that the discharge should be entirely stopped. If a single drop remains, it will go on to cause inflammation, and the disease will hold its ordinary course.

Should the malady be in such a state as to render this mode of treatment hopeless, it will be necessary to allow it to run its natural course. A period will arrive when the urethra will become accustomed to the virus, and the inflammation will then spontaneously subside. In the mean time, the surgeon must endeavor to moderate its violence, by the removal of all stimulants which can be avoided. The chief stimulants are the urine and the discharge. The urine must be rendered mild, by neutralizing its acidity, and by copious dilution; and the discharge must be moderated by astringent medicines, given in such doses as will only slightly check the increase of the secretion, without occasioning any immediate or sensible diminution in its quantity. Everything should be avoided which would determine to the parts affected. The diet should be light, and rather sparing, and no violent exercise should be taken; but there is no advantage in rigid abstinence, or absolute rest, or in any restrictions which would interfere with the general health, or materially lower the general tone.

However, should the inflammation extend to the parts surrounding the urethra itself, or, as Mr. Hunter expresses it, beyond the specific distance, this rule will not always apply. If there is tenderness and swelling of the perineum, or inflammation of the neck of the bladder, a horizontal posture and a careful regimen may be necessary. Yet even here, it is better that blood should be abstracted locally and not generally, and that the diet should not be much reduced below the usual standard of health.

When the inflammatory symptoms have nearly subsided; when the ardor urinæ and chordee have disappeared; when the orifice of the

urethra has lost its red and turgid aspect, and the discharge is less profuse and less purulent, astringents may again be given in full doses, and will generally complete the cure.—G. G. B.]

[RICORD.—Allow me to give the results of my personal experience.

Gonorrhœa is a disease, primarily and almost always definitively, local in its character.

Complications are sometimes developed in the neighboring parts, through continuity or contiguity of tissue; but sympathetic effects at a distance are very much less frequent.

The number and gravity of supervening symptoms are in proportion, not only to the intensity of the primary affection, but also to its duration.

Gonorrhœa does not immediately attain its maximum severity; nor does it run through regular stages, nor last a limited time.

In spite of Hunter's ideas to the contrary, we are too far removed from a pure Stablistm, to coincide with the vulgar belief in the necessity of suppuration, and the need of letting the discharge run on unchecked. The abundance of the suppuration is in proportion to the degree of the inflammation, and does not cause a diminution of the latter. The pretended danger of a rapid cure, or of driving in the discharge, is imaginary, and the contrary proposition may be proved, viz., the more rapid the cure, the more speedy security from complications.

It results from this proposition, that the treatment of gonorrhœa should aim to prevent its development; to diminish the intensity of its symptoms, when we have been unable to stop it at the outset; and finally, in every case, to abridge its duration as much as possible. It is necessary, therefore, to divide treatment into abortive, palliative, and curative.

The agents in the *abortive treatment* are direct or indirect. They may be employed alone or together.

Whilst there is as yet no sign of acute inflammation, on the first, second, third, or fourth day, or even later, we may employ injections of nitrate of silver, or use this salt in a solid state, prescribing, at the same time, cubebs or copaiba internally. Nitrate of silver is an excellent and powerful modifier of inflamed mucous membranes, but it is not without its inconveniences; it often excites much pain, and the artificial inflammation which it causes is sometimes so severe as to occasion symptoms which, although transient, are none the less disagreeable. I have almost entirely renounced its use.

If there already exist some degree of inflammation and pain, or these symptoms appear under the influence of injections, we should abandon their use, continuing meanwhile the internal remedies, aided by diet and other means, which we will presently indicate.

As soon as the inflammatory stage is fully established, abortive treatment is no longer applicable, for it may injure, rather than benefit.

In this case, we should employ the *palliative treatment* of the acute stage, which may be summed up as follows:—

General repose of the patient, but above all, local repose of the affected part; the use of a suspensory bandage, when walking or in

the upright position; strict diet, proportioned, however, to the strength of the individual and the severity of the disease; avoidance of excitants of every kind, particularly, liquors, beer, asparagus, etc.; copious cooling drinks, suited to the taste of the patient.

Freedom of the intestinal canal, by means of enmata or gentle purgatives; protracted warm baths, noticing, however, their effect, some patients not supporting them well; local bathing, for the sake of cleanliness, or for its sedative effect, beware, again, lest it occasion congestion, or favor œdema; lotions, fomentations, cataplasms, following the same rules.

Local bloodletting, when the disease is free from general reaction; venesection in the opposite condition. In the first case, giving the preference to leeches, they should be applied as near as possible to the diseased parts, avoiding, in cases complicated with chancres, any sloping parts within reach of the pus, and in every case, those regions where lax cellular tissue favors œdema, and exposes the patient to the severe symptoms of erysipelatous inflammation, and even to gangrene, which often take place when leeches are applied to the scrotum, penis, eyelids, &c.

When the acute stage subsides, as is shown by the diminution or complete cessation of pain in micturition, much more than by the absence of pain in erections—which, as Hunter justly observes, may continue to be painful a long time after all running has stopped—we should no longer persist in antiphlogistic treatment, which, far from curing, in most cases, as has been advanced, tends, on the contrary, to make the disease pass into an indefinitely chronic stage.

We should immediately abandon the use of general bathing, which may not only keep up the disease in this stage, but even cause its return, when resumed too soon after a cure.

A more tonic regimen should gradually be employed, while anti-blennorrhagic remedies, properly so called, are prescribed. Here, as in the abortive treatment, two modes present themselves: the direct and indirect.

I. *Direct treatment.*—Direct or local medication should rank first. The indications which it should fulfil are: to isolate the diseased mucous membranes, by preventing their coming in contact; to oppose the stay and stagnation of morbid secretions in the parts; and to dry up the discharge.

The first indication is not easily fulfilled in urethral gonorrhœa, although I have attempted it with success in many cases, of which I will hereafter speak. As to the other conditions of direct treatment, they are specially fulfilled by the use of injections.

Without seeking or absolutely rejecting a specific in injections, it is very certain that, among the remedies employed in this form, there are some which often have a most happy effect. In this respect, nitrate of silver has been ranked first, its action being so remarkable in the treatment of most of the inflammations of mucous membranes.

The formula to which I formerly gave the preference, and which may be used in the abortive treatment, is the same as proposed by Prof. Serre, of Montpellier, after having witnessed my practice.

R.—Argenti nitratis gr. ij;
 Aquæ destillatæ ℥viij.—M.

Injections of this liquid should be made with a glass syringe.

The injections should be cold, and they should not be prevented from running the whole length of the canal, in order that they may reach the diseased part in every case.

The number of injections a day should be limited; six are generally sufficient, and do not fatigue the canal. If, after a day or two, the running increase, and especially if it become a little bloody, the injections are to be suspended. After which, the morbid secretion soon diminishes and dries up, or subsides to that degree of intensity which it had at first. In the first case, injections are no longer advantageous; in the second, they must be resumed. Sometimes, however, nitrate of silver, of the strength above mentioned, has little effect on the progress of the disease; in which case, its strength should be gradually increased until one of the results mentioned be produced.

Dr. Carmichael, in England, in 1841, and Dr. Debeney, in France, in 1843, proposed caustic injections, of a strength of twelve or fifteen grains to the ounce, in all stages of gonorrhœa. This method, strongly opposed by my learned friend, Dr. Venot, of Bordeaux, often has a happy effect in the abortive treatment. However, I now prefer the following injections:—

R.—Aquæ rosæ ℥vj;
 Zinci sulphatis,
 Plumbi acetatis, āā gr. xxx.—M.

The following is another formula, which I have often used with success:—

R.—Aquæ rosæ ℥vj;
 Zinci sulphatis gr. xv;
 Plumbi acetatis gr. xxx;
 Tinct. catechu,
 Vini opii, āā ℥j.—M.

The mixture should be shaken before using, and three injections given daily, letting the fluid remain in half a minute, or a minute, if there is not too great sensibility.

It is not necessary, however, to exclude other injections from our practice; we may, perhaps, direct their employment as follows:—

Injections of acetate of lead, when nitrate of silver irritates, without doing any good; of zinc, when these two fail; of tannin and wine, when there is atony and a relaxed state of the membrane; with the addition of laudanum, when there is need of a sedative astringent; and, finally, injections of corrosive sublimate, iodine, iodide of iron, and even the caustics, when it is necessary, as we shall see farther on, to produce a more profound modification, or perturbation of the part. Injections of chloroform have not succeeded in my hands.

Injections have been reproached:—

1. With exposing the patient to repeated and dangerous handling of the parts. This objection is ridiculous.

2. They have been accused of driving in the contagious matter, and of prolonging the disease. This effect is anything but proved.

3. It has been thought that they often excite inflammation of the neck of the bladder, and engorgements of the epididymis. Badly administered and highly concentrated, or made of unsuitable ingredients, they may produce this effect; but, in this case, the fault is not in the remedy, but must be ascribed to those who have badly applied it.

4. Finally, the most formidable and stubborn objection is the assertion, that injections are the most common cause of strictures of the urethra.

In opposition to the ideas which men are prone to promulgate on this subject, it may be said that injections not only do not cause strictures in any case, but that, on the contrary, they anticipate them, when they promptly stop a gonorrhœa; and that, even in certain cases of soft hypertrophy of the urethra, they may cure strictures dependent thereon.

Those patients who have strictures after using injections, are those in whom the running was not stopped; and it was its persistence which caused an alteration of the tissues, as occurs in all inflammations which last too long.

In short, the bad effects of injections pertain to their bad administration or to their want of action.

II. *Indirect treatment* should be employed as soon as the use of injections is commenced. In some cases even, when the urethra is still too susceptible, or becomes irritable under the influence of injections, indirect treatment should, at the outset or subsequently, be employed alone.

Indirect remedies may be enumerated in the following order, according to their greater or less degree of efficacy: copaiba, cubebs, the turpentine, purgatives, diuretics, astringents, tonics, iodine, derivatives, diaphoretics, etc.

Copaiba, to which Hunter seems to grant only the power of diminishing the morbid secretion, without having any marked influence on the inflammation which produces it, has, however, the latter effect to such a degree, when it is properly employed, that we are forced, in spite of M. Jourdan's prejudices, to accord to it a certain specific antilemnorrhagic property.

Copaiba acts on the stomach, the intestines, the urinary passages, the skin, and, in some rare cases, on the nervous centres.

In the stomach, it may excite nausea, eructations, retching, and, when not tolerated, vomiting; or it may cause irritation and true inflammation. These various effects on the stomach are so much loss, and have no curative action on the gonorrhœa.

In the intestinal canal, it may simply purge, or at times cause constipation, or it may excite different degrees of inflammation. It is, however, in this part of the digestive organs that the beneficial action of copaiba takes place. In some patients, its good effects are proportioned to the alvine evacuations it excites, whilst in others the contrary is observed. These different conditions of success can only be determined *a posteriori*.

But copaiba produces its most powerful effect when it traverses the urinary passages, which takes place only when it is tolerated by the intestinal canal. This effect is shown, by a slight increase in the secretion of the urine, whose odor, combining with that of the remedy, undergoes a change; by an irritation, sometimes considerable, of the neck of the bladder, which excites frequent desire to urinate; and, finally, by an increase of the burning in the urethra during micturition. Here, in its effect on the urethra, we recognize the almost specific action of balsam of copaiba; and we may assert that it is as powerful in the treatment of urethral gonorrhœa in the two sexes as it is inert in the other varieties of this affection.

In proof of this statement, I will report the following case, which I have published in the third number of my *Iconographie de l'hôpital des vénériens* :—

Accidental division of the urethra ; Urethral gonorrhœa ; Urethroplastic operation.—T——, aged 26, a shoemaker, entered ward No. 3, June 16, 1840.

This patient, at the age of seven, in one of those odd caprices that have given rise to so many curious accidents connected with the genital organs, took it into his head to tie a thread round his penis. This thread, drawn tight, a little in front of the scrotum, produced, the following day, considerable swelling of the tissues, beneath which it soon disappeared, cutting its way through the skin. To the general tumefaction of the parts, and the section of the integument, retention of urine was added, which the patient declares was complete during a period of fourteen days.

At this time, that is to say on the fourteenth day, the urethra was in turn divided by the thread, and a large quantity of urine escaped through the accidental opening which was made.

It was only then, if we may believe the patient, that his parents, who, up to that time, were ignorant of his state, called in a physician, in consequence of the grave symptoms which supervened, and of which he can give no clear account. We will not describe in detail the treatment which the patient received under these circumstances; and we will only say that he recollects perfectly that the thread could never be found, in spite of all the care with which the physician looked after it. However, at the end of six weeks he was cured, but still retained the vice of conformation which he had acquired, and with which he presents himself to our observation.

The spongy portion of the urethra is now divided through its whole thickness, a little in front of the scrotum, and the canal is thus cut into two parts; the one connected with the bladder, the other with the penis. The two accidental orifices resulting from this division, at the distance of about an inch from each other, are slightly swollen, directed obliquely downwards, and present an eversion of the mucous membrane. The tissue lying between and around them consists of a deep and hard cicatrix, which forms a ring or circle, constricting the yard at the same point in its whole circumference. Partly in consequence of congenital malformation, but especially from the former

inflammation, a phimosis exists, which entirely prevents the glans from being uncovered.

His urine is discharged in a perfectly normal stream, and is perhaps a little inclined to curve towards the pubis. The anterior portion of the urethra does not appear to participate as much in the turgescence of erection as in the normal state, and the glans is certainly less florid. This portion also takes no part in voluptuous sensations, which are limited to the posterior portion of the canal; so that the fossa navicularis, in this patient, is not the goal or rendezvous of urethral sympathies. Ejaculation is performed in the same way as the emission of urine; and the semen, which is projected with much less force than in the ordinary state, does not pass through the anterior portion of the canal.

The patient was in this state, when, the first of June, 1849, eight days after having intercourse, a gonorrhoeal discharge appeared. The disease began in the vesical portion of the urethra, and it was only four days later that the external portion became in turn affected; the discharge then flowed from the orifice of the vesical portion, and from the two orifices of the external portion (the meatus urinarius and the accidental opening).

June 17th. The inflammation is everywhere very intense; the discharge is very abundant, strongly purulent and greenish; however, in spite of these decided symptoms of extreme severity in the disease, the vesical portion of the canal, which alone is traversed by the urine, is the only seat of pain during the emission of this fluid, and the external portion is slightly sensitive only on pressure. Erections are not at all painful, the canal being divided in the most favorable part for preventing the formation of what is usually called "the cord;" the result of a deficient lengthening of the canal, rendered rigid by inflammation, which is observed in gonorrhoea attended by chordee. The patient is ordered a light diet, a cooling ptisan, and a bath.

19th. The acute stage has almost entirely yielded to repose and antiphlogistic regimen. There still remains a little pain in passing water. Six drachms of cubebs are ordered in three doses; continue the same regimen; suspend the baths.

21st. The morbid sensation has considerably diminished in the vesical portion of the urethra, whilst it has undergone no modification in the external portion.

24th. The running has entirely stopped in the vesical portion; the cubebs is continued; the diet increased by one-half.

July 1st. The cubebs is omitted; there has been no trace of a discharge in the vesical portion. The condition of the external portion does not appear modified; the same diet is continued.

6th. The morbid discharge has reappeared in that portion of the urethra in which it stopped; and this is perhaps explained by the fact that, during the administration of the cubebs, the abnormal orifices of the canal were kept separated; whilst, after the cure of the vesical portion, the pus, furnished by the external portion, was allowed to come in contact with the orifice of the sound portion of the canal.

8th. The previous treatment is resumed, and six drachms of cubebs given; the regimen as before.

16th. The gonorrhœal discharge is again dried up in the vesical portion of the urethra; the treatment and regimen are continued.

17th. A solution of nitrate of silver (a grain and a half of the crystallized nitrate to six ounces of water), is injected into the external portion of the urethra, in order to cure the discharge of which it is the seat; the same treatment and regimen.

20th. Under the influence of the injections of nitrate of silver, the gonorrhœal discharge from the external portion of the urethra has almost entirely disappeared. Treatment and regimen as before.

22d. There is no trace of a discharge remaining in any part of the canal; all treatment is stopped, but the regimen is continued.

26th. The cure of the gonorrhœa is complete; there is not the least morbid secretion. Desiring to allow the patient a few days' rest before performing the urethro-plastic operation, that his state requires, he is allowed to go out and arrange some private business.

Although he promised to return sooner, T— was not able to come back to the hospital till October, 1840.

The preceding observation is interesting as regards external treatment, and the action of antiblennorrhagics. The state of the patient presented a fine opportunity of studying the mode of action of these remedies, which are almost specifics in urethral gonorrhœa, but which have scarcely any effect in other varieties of gonorrhœa. We were able to convince ourselves in this case, in the clearest manner possible, that antiblennorrhagics act especially in virtue of the peculiar modification which they undergo in passing through the renal filter, to be afterwards transported by the urine, and applied locally to the diseased mucous membranes, which this fluid traverses; and they are thus applied, with their elements better combined, or with curative properties, which vital chemistry, and the mechanism of certain functions, alone have the secret of extracting and applying. Indeed, it will be recollected that twice, in the case of T—, cubebs exerted a curative action only on that portion of the urethra which the medicated urine traversed; whilst that part, which was foreign to the discharge of this fluid, underwent no modification.

I do not, however, deny the general action of the balsams, as I have been charged with doing; I admit, as everybody does, that they may communicate certain properties to the blood, and modify certain secretions. I am equally convinced of their revulsive action. But experience has taught me, as well as others, that this is their most feeble and uncertain mode of action, as may be seen in the above case, by the persistence of the gonorrhœa in the anterior portion of T—'s urethra; and as may be seen every day in the treatment of balanitis, of discharges from the vulva, vagina, or uterus, and in gonorrhœal ophthalmia, where they produce no more effect. Under some circumstances, more or less acute irritation of the digestive organs is excited, and vomiting, or oftener diarrhœa, induced; in such cases, they may modify or even suppress certain runnings, without communicating, at least in an appreciable degree, any of their elements to the urine; but,

experience teaches, that in these cases the suppression of the disease is only temporary, and that it reappears as soon as we suspend the use of the remedies, which have acted only in the general manner of revulsives, without any specific action. It may be added that if, with intention of maintaining the cure, the dose of these drugs be increased, so as to surpass the safe bounds of revulsive action, and if we thus produce a true inflammatory state of the gastro-intestinal mucous membrane, then again the revulsive action stops, and the gonorrhœa reappears; but this time it is more intense and obstinate, since the trouble produced in the digestive organs now favors the disease which we wish to combat, and deprives us of the use of an internal remedy, which might have been more wisely administered.

On the other hand, when the balsams taken internally exert their action on the skin, and produce eruptions, commonly no revulsive action is observed, and the gonorrhœa for which they were administered continues the same as before their use, or is even aggravated, and almost always forces us to suspend them, until the eruption has disappeared.

My honorable colleague, the late Dr. Cullerier, convinced, as I was, of the little confidence to be placed in the general and revulsive action of copaiba and cubebs, and certain that there must be something peculiar in the action of these agents on diseased mucous membranes, made experiments for several years, on their direct action, when applied in substance to the mucous membranes, by means of injections or otherwise; and, contrary to the opinion advanced by some able experimenters, but who are a little too hasty in their conclusions, he found that the effect was inappreciable, or injurious. I will also add, in support of these experiments, that I have obtained no better result from the administration of copaiba and cubebs by the mouth in reputed gonorrhœal discharges from the lower portion of the rectum; and this could easily have been foreseen, since the effect must be very nearly the same as in the experiments of Dr. C., for a considerable quantity of these substances frequently passes through the digestive tube, without undergoing any alteration, and may thus be justly considered as applied locally to the diseased parts.

Hence, we must rely on injections and appropriate local applications in the treatment of all varieties of gonorrhœa, other than urethral gonorrhœa; and in the latter, we cure the sooner and the more readily in proportion as we associate with the internal treatment, suitably adapted to produce an action on the urinary passages, a local treatment, in which the use of nitrate of silver should rank first.

I have also thought it interesting to add to the preceding observation the two following recent cases, which I have communicated to the Academy of Medicine.

Gonorrhœa in a urethra divided in its middle portion, in front of the peno-scrotal angle.—P——, aged 24, entered the Hôpital du Midi, Feb. 2, 1849.

When seven years old, this patient took the singular fancy to stop his water, by strangulating his penis with a tightly drawn cord; the cord was removed at the end of several hours; but the constriction had

lasted long enough to deeply mortify the tissues, including the urethra, and to occasion the lesion, which we proceed to describe.

At the junction of the posterior with the middle third of the penis, there exists a circular constriction, the result of compression of this organ. At this point, the skin presents a circular, furrowed cicatrix, about two lines in depth; the portion of the yard anterior to the constriction has attained its normal development. The urethral canal, opened in front of this constriction, presents a clearly defined circular orifice, through which a director can be introduced. Posterior to the cicatrix, the second portion of the urethra opens by a more everted, uneven orifice than the preceding; has a very irregular border, and is capable of admitting a catheter of ordinary caliber. All the urine comes out of this opening.

Erections are nearly the same as in the normal state. A month ago, P—— contracted an acute gonorrhœa, which had not been treated until his admission to the hospital.

On entering the Hôpital du Midi (Feb. 2), the disease occupied the two portions of the canal; the abundant discharge was of a greenish yellow color; the posterior portion of the canal was the seat of tolerably acute pain, during and after the emission of urine; at night there were erections, attended with scarcely any pain.

Feb. 3. The patient is ordered an emulsion of copaiba. In order to appreciate exactly the effect of the remedy on each part of the canal, I carefully plug up with diachylon the orifice in front of the stricture; though it is almost a superfluous precaution, since all the urine comes out of the posterior opening; the urine thus charged with the medicinal element, will affect only that portion of the urethra which is behind the solution of continuity.

6th. The discharge has much diminished, and changed its color and character in this portion; pressure of the fingers produces a drop of whitish muco-pus, suspended in a clear adhesive fluid; the pain has ceased.

8th. The discharge has completely disappeared in the posterior portion. I now direct the patient, who continues the use of the copaiba, the moment he has passed his urine, to inject it from behind forwards (through the artificial opening) into the anterior portion, which has undergone no modification.

12th. There is already a marked improvement; the nature of the discharge has changed; it is of a yellowish-white color and much less abundant.

15th. The quantity and color of the discharge are still farther modified; three-quarters of an hour after injecting, on squeezing the canal, we obtain with difficulty a drop of very clear muco-pus, at the orifice of the natural meatus.

16th. The discharge is cured throughout the whole canal.

I met with the second case in my private practice.

Accidental hypospadias; gonorrhœa cured successively in the two portions of the canal.—M—— was affected at the same time with gonorrhœa and a rupture of the urethra, which produced an accidental hypospadias in the middle portion of the penis. As in the preceding

observation, the mortification of the tissues, and consequent rupture of the urethra, was the result of constriction exercised by a cord, and it was at the same age, of seven years, that the patient inflicted on himself this injury.

The urine escaped by the artificial meatus; but the patient could make it pass through the whole length of the canal, by applying the anterior portion of the penis to the posterior, and maintaining the longitudinal axis of the organ, so as to stop up the traumatic orifice. Copaiba was given internally; the gonorrhœa stopped, in a few days, in the posterior part of the urethra, but it continued in the anterior part, through which the urine, charged with the medicinal elements of the copaiba, was not allowed to run.

No change was made in the treatment, however, for three days. The cure of the posterior part of the urethra being then perfectly established, the internal administration of the copaiba was continued, but now the patient made the urine run through the whole extent of the urethra, by taking the precaution above indicated; by this method, the copaiba-bearing fluid cured the anterior portion of the canal, but in double the time which was required for the cure of the posterior part.

My learned colleague, Dr. Hardy, has presented to the Society of Physicians of the Hospitals of Paris, some cases of the cure of vaginal gonorrhœa by injections into the vagina of urine charged with copaiba. I have myself thus succeeded in some cases of balanitis.

But when I have endeavored to mix the copaiba with the urine after its emission, and then inject it, I have always failed.

I have instituted some researches, not yet completed, to ascertain if the medicated urine, prepared by the kidneys, cannot be imitated, but I have as yet obtained no very satisfactory result.

In the cold and wet weather of spring and autumn, copaiba often determines cutaneous eruptions, which, in order of frequency, come under roseola, urticaria, or simple erythema. These eruptions appear especially when the digestive organs are disordered. They are generally attended with severe itching, and rarely last beyond a week, when, recognizing the cause to which they are due, we suspend the treatment. This action of copaiba upon the skin, while it torments the patient, not only has no beneficial action on the gonorrhœa, but it is not uncommon to see patients in whom the running, after being dried up, reappears as soon as a cutaneous eruption shows itself. After these practical observations, which may be repeated every day, we must beware of adopting the opinion recently advanced in the *Dictionary of Practical Medicine and Surgery*, which states that the action of copaiba on the skin, is not a contra-indication to its use.

I cannot speak of the action of copaiba on the skin without pointing out a serious mistake made by M. A. Cazenave, in his *Traité des Syphilides*. This pathologist considers the exanthemata produced by copaiba and cubebs as true syphilitic symptoms, from the sole fact that a gonorrhœa preceded them! But for what are these remedies given? And is the existence of a gonorrhœa necessary that they should produce such effects?

The rarest of all the effects of copaiba is doubtless its action upon

the nervous centres. And yet, I have had the opportunity of observing patients in whom excessive doses of this drug, or its untimely administration, produced alarming symptoms of congestion, and excitation of the spinal marrow and brain. In the case of a woman, it caused a temporary hemiplegia, which disappeared as soon as a lively rubeolar eruption showed itself; whilst in another female, its employment was followed by violent convulsions, whose crisis was also an acute exanthema.

Copaiba is applied locally by means of dressings, injections, or suppositories. It is given internally by the stomach or rectum.

Its direct application is without effect or injurious. Its best mode of administration is by the stomach; it is ten times more powerful, when given in this way, than by the rectum, and it should be given by the large intestine only when the stomach cannot tolerate it.

The purer, and more free from adulteration copaiba is, the better it acts. All the pharmaceutical preparations, whose object is to solidify it and remove its taste or smell, are liable to impair its efficacy.

The stomach may be made to bear it, by combining it with antispasmodics, opiates, tonics, &c. Acidulated drinks answer very well for this purpose, as lemonade and Seltzer water.

The capsules, in which it is now given, constitute a true advance in pharmacy.

When copaiba purges too powerfully, without good result, it must be combined with astringents; or when it has the opposite effect, its action must be increased by purgatives. In the same manner, also, when its action on the urinary passages is not decided enough, diuretics must be given as adjuvants.

It is given by the rectum, in small enemata, or in the form of a suppository. Some persons retain more easily capsules introduced into the intestine above the sphincter, as proposed by Dr. Ratier, the skilful collaborator with Cullerier.

We do not obtain the happiest results by commencing with minute doses. From one to three drachms, and even eight drachms and upwards, may be given daily, according to the patient's susceptibility. When copaiba has produced its effect, its use should not suddenly be suspended; we should finish off with decreasing doses.

After copaiba, and perhaps of equal importance as an anti-blennorrhagic, we must rank cubebs. The latter is less nauseating than the former, but it is more irritating, and causes constipation more frequently than diarrhoea. It imparts much less odor to the urine, and its action on the skin is infinitely more rare.

Since it is cheaper, and more easily obtained pure in commerce, it generally deserves the preference; regard being had, however, to some of its properties, which we have just mentioned, and which often find their application.

The dose is from four to eight, or even fifteen drachms a day. It may be given, like copaiba, with which it is often united, under many pharmaceutical forms; the most simple is in powder; the most agreeable and convenient is in capsules.

The turpentine, and especially Venice turpentine, are much less

powerful, spite of what has been said of them latterly. Purgatives, at most, only serve to fulfil certain indications; the same is true of diuretics, on which we no longer rely, as Töde and his followers did. As to astringents, tonics, and iodine, which MM. Richond and Henry have so highly recommended; derivatives to the skin, blisters, cold baths, vapor baths, etc.; we should consider them only as purely accessory means of treatment, and of very little efficacy.

Since Hunter says nothing of balanitis, or external gonorrhœa, I may be allowed a few words on the subject.

The best treatment of this form of gonorrhœa consists in the superficial cauterization of the affected part, with stick nitrate of silver; this is to be passed rapidly over the surface, so as to whiten it, without giving the caustic time to penetrate deeply. Having done this, if the glans can be uncovered, a pledget of dry lint is placed between it and the prepuce, and renewed twice a day. When the balanitis occurs without any erosions, simple lotions of lead water, and the interposition of dry lint, are sufficient. When there is more or less phimosis, cauterization, by passing the lapis infernalis between the glans and its envelope, and afterwards injecting Goulard's extract, gives the happiest results. I generally use lotions or injections between the glans and the prepuce, twice a day, of the following:—

R.—Aquæ destillat. ℥vj;
Argent. nitrat. gr. xxx.—M.

When other applications, as emollients, antiphlogistics, and reputed specifics fail, or prolong the disease, you obtain, by this means, the most rapid cure. More or less inflammation is not a counter-indication; but in cases of excessive inflammation, abstraction of blood may be added to the treatment; and it is only in cases of threatening gangrene that we should operate for the acute phimosis, which may complicate balanitis.

In woman, gonorrhœa of the vulva is the most easily cured. It yields to the same means as balanitis. When the vagina is affected, the acute stage requires antiphlogistics, especially the use of emollient and sedative injections. But as soon as this stage subsides, or when the chronic stage precedes or follows it, the method which has given the most happy results, and which I was the first to notice favorably, though it has been copied by others, is the use of nitrate of silver in a solid or liquid form. In the first case, the parts are exposed by means of my bivalve speculum; and, commencing with the deeper regions, the nitrate of silver is passed over the whole surface of the vaginal parietes as the instrument is withdrawn. After this application of caustic, the walls of the vagina are kept separated by dry charpie, as in the treatment of balanitis. This cauterization is followed the day after, by resolvent or astringent injections, repeated three or four times a day. The application of the solid nitrate succeeds especially when the mucous follicles are much affected, in that form which I have designated under the name of *psorélytrie*. It should be repeated after an interval of three or four days, if the disease remains in *statu quo*, or be abandoned, if the discharge is aggravated or dries up. In

other cases, it is sufficient to inject, two or three times a day, a solution of crystallized nitrate of silver, containing fifteen to thirty grains to three ounces of distilled water.

In all cases, where injections are indicated, the action of the fluid is much more efficacious when it is kept in contact with the diseased tissues by means of pledgets soaked in it. Again, isolating the walls of the vagina by the introduction of charpie or carded cotton is often successful.

When the disease has involved the uterus, the above means may still act through continuity or contiguity of tissue; but, it must be confessed, they are more frequently powerless. Much may be hoped, in this case, from cauterizing the neck and its cavity by the introduction, with all necessary care, of a stick of nitrate of silver. Injections, also, with a solution of this salt, may be made of the strength that I have mentioned.

Nitrate of silver, suitably employed in these cases, causes no more unpleasant symptoms than any other method; and those who have blamed it, have badly read and observed, or imperfectly understood. Uterine injections, which M. Vidal invented about the same time as myself, produce, in some cases, very alarming nervous hysteric phenomena, which I pointed out in a memoir, in 1832. They must therefore be employed with excessive caution; and perhaps it would always be preferable to insert the medicated liquids, by means of a small sponge, attached to a piece of whalebone.

What I said of the treatment of urethral gonorrhœa in the male, is true of the same disease in the female; and copaiba and cubebs are here again efficacious.

I will only add a few words to what Hunter says of the constitutional treatment of gonorrhœa, so far as regards mercury. It is almost always injurious, employed as a constitutional remedy, and *a fortiori*, injurious as a local application. The *half treatment* of M. Lagneau is not rational,¹ and recourse should be had to this class of remedies only when other indications present themselves, and demand constitutional remedies, as the coexistence of an indurated chancre, or a persistent engorgement, to which mercury may be locally applied as a resolvent.—RICORD.]

[EDITOR.—In the treatment of gonorrhœa, it is often exceedingly difficult to make the stomach tolerate its chief remedial agent, copaiba. Capsules are far from being sufficient in the majority of cases. They frequently nauseate the patient, when taken in sufficient numbers, and their contents are often impure. That form of copaiba which is applicable to the largest number of cases, I believe to be copaiba solidified by magnesia, especially when combined with cubebs. Copaiba and cubebs together, are more effica-

¹ M. Lagneau regards gonorrhœa as a "superficial effect of the venereal virus," (see page 56), and after the discharge has stopped, administers "four grains of mercury daily for at least a fortnight." (*Dict. de Méd.*, Art. BLENNORRHAGIE.) Of course, this demi-treatment will be used only by those who believe in the existence of a demisymphilitic disease.—ED.

cious than either alone, and are better supported by the stomach. I am in the habit of using the following formula, in large doses :—

R.—Copaibæ ℥ij;
Pulv. cubebæ ℥j;
Aluminis ℥iiss;
Magnesiæ q. s.

To be taken in boluses, in from three to six days, according as the stomach is able to bear it. The alum is added as an astringent. Its place may be supplied by a cathartic, as rhubarb, or a tonic, as carbonate of iron, to meet certain indications. Copaiba thus solidified is nearly tasteless, can be conveniently taken in large doses, and is borne by the stomach remarkably well. This formula is essentially the same as those recommended by Velpeau, Vidal, Maisonneuve, etc. M. Velpeau, especially, relies entirely on large doses of copaiba and cubebs, combined and solidified by magnesia, in the treatment of the early stages of gonorrhœa.

The most convenient way of taking cubebs alone is in the wafer-paper, or *pains à chanter*, which can now be purchased of any of our chief druggists.

With regard to the question to which stage of gonorrhœa copaiba and cubebs are particularly applicable, and whether they are contra-indicated by a high degree of inflammation, the opinions of authorities have undergone a remarkable change. It was formerly thought, that they should be used only after the discharge has become chronic, and in small doses; but this opinion is now proved to be incorrect. They are powerful remedies in acute gonorrhœa, and may even be administered in large doses; but they have very little efficacy in gleet.

Whether they are contra-indicated in cases of excessive inflammation, has not been so satisfactorily settled. Many surgeons abstain from their use till the more inflammatory symptoms have subsided, for fear of producing complications, swelled testicle, &c.; but others, like M. Velpeau, do not fear to use them in any stage of an ordinary case; and others, still, within the last half century, have gone so far as to consider them peculiarly applicable to the high degree of inflammation and the complications which often occur in gonorrhœa. Among the latter may be mentioned, Ansiaux, Ribes, Laennec, Delpech, and Trousseau.

This, and many other points connected with the treatment of this affection, demand farther investigation; and it belongs to those surgeons who are suitably situated for the purpose, to make the necessary careful analyses of cases, to ascertain what are the exact indications for each of the numerous modes of treatment, that compose the therapeutics of gonorrhœa.—EDITOR.]

CHAPTER VII.

OF THE TREATMENT OF OCCASIONAL SYMPTOMS OF THE GONORRHOEA.

As the following symptoms are 'only occasional consequences of a venereal gonorrhœa, being the effects of an irritation on the urethra, and therefore not venereal, they are to be treated in the same manner as if they had arisen from any other cause.

§ 1. *Of the Bleeding from the Urethra.*

It has been already observed, that when the inflammation is violent, or spreads along the urethra, there is frequently a discharge of blood from the vessels of that part. In such bleeding, the balsam capivi, given internally, has been of service; and it may be supposed that all the turpentine will be equally useful. I have not found any good effects from astringent injections, and in some cases have suspected that they have been the cause of this complaint. They always go off in the usual time of the cure of the gonorrhœa.¹

§ 2. *Of preventing Painful Erections.*

Opium, given internally, appears to have great effects in preventing painful erections in many cases. Twenty drops of tinctura thebaica, taken at bedtime, have procured ease for a whole night. The cicuta likewise seems to have some powers in this way.

§ 3. *Of the Treatment of the Chordee.*

In the beginning of this complaint bleeding from the arm is often of service; but it is more immediately useful to take away blood from

¹ Bleeding from the urethra in gonorrhœa is beneficial, and should very seldom be repressed. If, however, the quantity which is lost is very excessive, and it becomes necessary to check it, the application of cold, in the form of a bladder filled with ice, to the perineum, will be found by much the most effectual remedy.—G. G. B.

[Bleeding from the urethra takes place by exhalation, or is a consequence of lacerations of the canal, which often occur in gonorrhœa attended with chordee. It may sometimes be beneficial. Contrary to what Hunter says, copaiba and the turpentine have little effect in repressing it, and may even be injurious.]

When the loss of blood is considerable, we must endeavor to stop it. Repose, cold injections, and ice to the neighboring parts, often succeed; but when it is due to a ruptured vessel, which is often the case when patients try to subdue their chordee by violently straightening the curved penis, we are sometimes obliged to have recourse to compression. This is exercised by introducing a sound into the urethra; and if the bleeding still continue, a circular bandage around the anterior portion of the yard, or a pad to the perineum, may be applied externally.—RICORD.]

the part itself by leeches, for we often find by a vessel giving way in the urethra, and a considerable hemorrhage ensuing, that the patient is greatly relieved. Relief will often be obtained by exposing the penis to the steam of hot water. Poultices have likewise beneficial effects, and both fomentations and poultices will often be assisted in removing inflammation by the addition of camphor. Opium given internally, is of singular service, and if it be joined with camphor the effect will be still greater; but opium in such cases acts rather by lessening the pain than by removing the inflammation, though by preventing erections it may be said to obviate the immediate cause of the complaint.¹

When the chordee continues after all other symptoms are gone, little, or nothing, in the way of evacuation, seems to be necessary, the inflammation being subdued, and a consequence of it only remaining, which will cease gradually by the absorption of the extravasated coagulable lymph. Therefore bleeding in this case can be of no use. Mercurial ointment applied to the parts will promote the absorption of the extravasated coagulated lymph, for experience has shown that mercury has considerable powers in exciting absorption. The friction itself also will be of use. In one case considerable benefit seemed to result from giving the cicuta, after the common methods of cure had been tried. Electricity may be of service. This symptom is indeed often longer in going off than either the running or pain; but no bad consequences arise from it. Its declension is gradual and uniform, as happens in most consequences of inflammation.

In relieving the chordee, or the remains of it, which appear to arise from spasm, I have known the bark of great service. Evacuations, whether from the part or from the constitution, generally do harm.

§ 4. *Of the Treatment of the Suppuration of the Glands of the Urethra.*

Suppurations in the glands of the urethra are to be treated as chancres. Therefore mercury ought to be given, as will be explained hereafter.

Should suppuration take place in Cowper's glands, it demands more attention. The abscess must be opened freely and early, as the matter, if confined, may make its way either into the scrotum or urethra, whence would arise bad consequences. Here also mercury must be given, and perhaps as freely as in a bubo. In short, the treatment should be the same as in a venereal ulcer; and in this respect it will differ from the treatment of those abscesses which arise in consequence of stricture.²

¹ I am entirely of Hunter's opinion. Camphor is the most powerful sedative in erections, in spite of what some modern theorists have written on the subject. It should be added, that experience, which is better than any theories or arguments, teaches that opium is its best adjuvant. But they do not always succeed.

Dr. Sistach has lately submitted to the Academy of Medicine a mode of treating erections, by compressing the prepuce in front of the glans. This method is far from succeeding in every case.—RICORD.

² Experience does not confirm this doctrine. Suppurations in the glands of the urethra are not very uncommon in gonorrhœa, yet they heal readily without the use of mercury; nor are they ever followed by secondary symptoms.—G. G. B.

[I am entirely of Mr. Babington's opinion.—RICORD.]

§ 5. *Of the Treatment of the Affection of the Bladder from Gonorrhœa.*

When the disease extends as far as the bladder, it produces a most troublesome complaint, from which, however, bad consequences seldom arise. But I suspect that it sometimes has laid the groundwork of future irritation in that part, which has proved very troublesome and even dangerous.

Opiate clysters, if nothing in the constitution forbid the use of them, procure considerable temporary relief. The warm bath is of service, although not always; and bleeding freely, if the patient is of a full habit, often does good. Leeches also, applied to the perineum, have good effects. But in many constitutions bleeding will rather do harm; and we should be cautious in making use of this evacuation, for it has been already observed that many of these cases are rather from sympathy than inflammation. As this affection of the bladder often continues for a considerable time, producing other sympathies in the neighboring parts, and is not in the least mitigated by the methods commonly used, I would recommend the following trials to be made use of in such cases. An opiate plaster to be applied to the pubes, or the small of the back, where the nerves of the bladder take their origin; a small blister on the perineum, which is of service in irritations of the bladder arising from other causes.¹

§ 6. *Of the Treatment of the Swelled Testicle.*

When the testicle sympathizes either with the urethra or bladder, and is inflamed, rest is the best remedy. The horizontal position of the body is the easiest, as such a position is the best for a free circulation. If the patient cannot submit to a horizontal position, it is absolutely necessary to have the testicle well suspended. Indeed, the patient will be happy in having recourse to that expedient as soon as he is acquainted with the ease which it affords.

In this complaint, perhaps, no particular method of cure can be laid down. It is to be treated as inflammation in general, by bleeding and purging, if the constitution requires them, and by fomentation and poultices. Bleeding with leeches has often been of service. This we cannot well account for, as the vessels of the scrotum have but little connection with those of the testicle.

As I do not look upon the swelling of the testicle to be venereal, mercurials, in my opinion, can be of no service in these cases while the inflammation continues; but they are useful when that is gone and the induration only remains.²

¹ Irritation at the neck of the bladder is not uncommon in urethral gonorrhœa. This irritation is accompanied by spasm of the bladder, and by a discharge which is often bloody, through a process analogous to that of hemorrhoids. It is subdued especially by small, cold, opiated enemata.—RICORD.

² Though mercurials are not required for the sake of counteracting the venereal virus, yet experience shows that calomel is of the greatest service, even in the acute stage of inflammation of the testicle. It is probable that it acts here, as in many other cases of adhesive inflammation, by controlling the capillary circulation of the inflamed part. It should always be combined with purgatives, and generally with local bleeding.—G. G. B.

Vomits have been recommended in such cases, and are sometimes of service. I have known a vomit to remove the swelling almost instantaneously. The effects of the vomit most probably arise from the sympathy between the stomach and the testicle. Opiates are of service, as they are in most irritations of those parts. When such swellings suppurate, which they seldom do, they require only to be treated as common suppurations, and mercury need not be given.

In the history of this disease, I observed, and, indeed, it has been observed by most writers, that, when a swelling comes upon the testicle in consequence of a gonorrhœa, the running ceases, or, when the running ceases, the testicle swells; but which is the cause, or which is the effect, has not yet been ascertained. It has been also observed that when the running returns, the testicle then shows the first symptoms of recovery; so that, the testicle having lost its sympathizing action, the action is restored to the urethra. And here, also, it has not yet been ascertained which is the cause or which is the effect; but, from a supposition that the cessation of the discharge in the urethra is the cause of the swelling, it has been attributed to the mode of treatment of that irritation, and by some to injections.

It has been advised by many, and attempted by some, to procure a return of the running; but the methods used have hardly been founded upon any sound principle. Mr. Bromfield appears to have been the first who recommended a treatment suitable to this theory, which was to irritate the urethra to suppuration again, by introducing bougies. I have not seen that benefit that could have been wished, or that the first idea might induce us to expect, from this practice. Some have gone farther, by recommending the introduction of venereal matter into the urethra; but this appears to be only conceit, and is founded upon a supposition that such swellings arise only from venereal irritations. But I have already observed that they are produced by other causes.

It is generally a long time before the swelling of the testicle entirely subsides, although it does so more quickly at first than swellings of this part arising from other causes. Before it becomes less, it generally becomes softer, commonly on the anterior surface; and by degrees the whole becomes perhaps softer than natural, and then it diminishes. It is still much longer (sometimes even years) before the epididymis returns to its natural state; sometimes it is never reduced to its natural size and softness. However, this is of no great consequence, as no inconvenience results from a continuance of the hardness simply, though sometimes, perhaps, such testicles are rendered totally useless. I never had an opportunity of examining the testicle of one that was known to have this complaint, but have examined testicles where the epididymis has had the same external feel, and where the canal of the vas deferens has been obliterated. But this, I suspect, too seldom happens, for there are people who have both testicles swelled, and, notwithstanding, discharge their semen as before.¹

¹ The hardness which is left after inflammation of the testicle, does not appear, in most instances, to interfere with its functions. The obliteration of the vas deferens is not a frequent occurrence; and the induration which often remains in the epididy-

It is in this stage of the complaint that resolvents may be of service, such as mercurial friction joined with camphor. Likewise, we may usefully apply fumigations with aromatic herbs, in order to stimulate the absorbents to take up the superfluous matter. Electricity has been in some cases of singular service.

[RICORD.—The treatment of epididymitis can, perhaps, be more methodically laid down than that of any other of the affections of which we treat.

Venesection, when there is constitutional reaction. Application of leeches over the course of the inguinal canal and to the perineum, when the inflammatory symptoms are entirely local.

If there be an effusion into the tunica vaginalis, it must be drawn off, in whatever stage of the disease it occur. In cases of true orchitis, where the body of the testicle is involved, and the pain is very severe, owing to the constriction exercised by the tunica albuginea, we may do what J. L. Petit did, make incisions into the body of the testicle. These incisions have recently been employed in many cases of epididymitis, which were thought to be only cases of parenchymatous orchitis, so called.¹ It is evident that a highly swollen epididymis, compressing the testicle, by stretching the tunica albuginea over it, also gives rise to symptoms of strangulation, which may be removed by incisions, which are, moreover, harmless. Professor Velpeau, myself, and others, had already used this method, but without abusing it, as has since been done.

After reducing the inflammatory reaction by antiphlogistics, and drawing off any effusion into the tunica vaginalis, if the cord be not too much swollen, nor the sub-scrotal cellular tissue the seat of phlegmonous inflammation; and, with stronger reason, when no abscess has formed, and there is no tendency to suppuration, then the best treatment is by compression, which was first used by M. Fricke, of Hamburg. This is applied by means of small strips of emplastrum de Vigo cum mercurio, arranged circularly around the affected organ, by commencing with one turn round the origin of the cord, and descending as far as the lower portion of the testicle. Having done this, the bottom of it is compressed by means of small strips, closely applied from below upwards, in a criss-cross manner, so as to make a kind of basket, which completes the dressing.

It is a requisite for success that the compression, thus accurately applied, shall, in the course of half an hour or an hour after its application, give a sense of relief, such as has followed no other means em-

mis, is usually from deposition in the cellular membrane which connects its convolutions, or mere thickening of the membranes which invest it; and though it is not uncommon that some of the vasa efferentia should be totally obstructed, and converted into solid cords, yet, unless the whole of these vessels should be thus changed, such an occurrence is of little consequence, as those which still remain pervious will be sufficient to carry the semen, as before, into the vas deferens.—G. G. B.

Several dissections have given me the same results.—RICORD.

¹ In the affection of the scrotal organs attending gonorrhoea, M. Vidal admits three varieties, according to the part which is chiefly involved, viz: inflammation of the epididymis, or epididymitis; inflammation of the tunica vaginalis, or vaginalitis; and inflammation of the parenchyma of the testicle, or *parenchymatous orchitis*. M. Vidal's treatment by incisions is especially applicable to the last variety.—ED.

ployed. When the contrary is the case, and the pain increases, the dressing should be speedily removed, to avoid unpleasant symptoms.

When patients can bear compression, care should be taken to renew it as fast as the affected organ decreases in size under its influence. If this indication be not carefully fulfilled, disagreeable reaction will speedily follow.

When compression cannot be used on account of the above-mentioned contraindications, while we carry out other treatment, we may derive great advantage from the local application of mercurial ointments, together with emollient fomentations and cataplasms.

Leeches applied repeatedly in small numbers, according to Lisfranc's method, are of great assistance; as is also calomel taken internally.

Experience has taught me that it is not only useless to recall the discharge from the urethra, but that it is often dangerous; and that we cannot count on a complete cure of the epididymitis until the discharge has entirely stopped.

But if Bromfield's method be dangerous, there is still more risk in introducing fresh venereal pus into the urethra; for, in taking venereal pus, whose nature has not been previously ascertained by inoculation, we should run the risk of giving syphilis to a patient who has only a simple gonorrhoea.—RICORD.]

[EDITOR.—M. Velpeau first proposed to evacuate the effusion into the tunica vaginalis in this affection by incision with the point of a lancet. The lower and posterior part of the tumor, where the testicle is usually situated, is grasped by the left hand of the operator, while, with his right, he plunges a lancet perpendicularly into the bulging mass of the fluid above and in front. One or more incisions are made, which are usually followed by a jet of serum, or a few drops of blood. Lotions of acetate of lead are applied, and the operation repeated, if the effusion again accumulates.

The credit of reviving the practice of incising the body of the testicle, which was first proposed by J. L. Petit, is certainly due to M. Vidal (de Cassis). This surgeon first practised it only in case the body of the testicle was involved; but, finding the operation perfectly free from danger, he extended it to cases of simple epididymitis. It is performed in the same way as M. Velpeau's incisions of the tunica vaginalis, except that the knife is made to pass through the tunica vaginalis, and incise the tunica albuginea to the extent of half or three-fourths of an inch. In spite of the prejudices against this operation, M. Vidal says that he has performed it four hundred times without any bad result; and that it is always harmless if the incisions are confined to three-fourths of an inch in length. Its effects are in the highest degree satisfactory. It removes the strangulation, relieves the excessive pain, and acts as a powerful antiphlogistic in reducing the swelling.]

§ 7. *Of the Decline and Termination of the Symptoms of Gonorrhœa.*

The decline of the disease is generally known by an abatement of some or all of the above-mentioned symptoms. The pain in the part becomes less, or terminates in an itching similar to what is felt in the beginning of many gonorrhœas, and at last entirely goes off. The sense of weariness about the loins, hips, testicles, and scrotum, is no longer felt; and the transparent cherry-like appearance of the glans penis gradually disappears. These are the most certain signs of an abatement of the disease.

The running becomes less; or, if it does not diminish, becomes first whiter, then of a paler color, and gradually acquires a more slimy and ropy consistence, which has always been considered as the most certain sign of an approaching cure. When the running becomes more slimy, it is then changed from matter to the natural fluid which lubricates the passage, and also to that fluid which appears to be preparatory to coition. But it is often very inconstant in its appearances, arising frequently from different modes of living, exercise, or other causes.

It often happens that all the symptoms shall totally disappear, and the patients shall think themselves cured, and yet the same symptoms shall come upon them anew; commonly, indeed, milder than at first, though in some cases as violent, or even more violent; and this takes place sometimes at a considerable distance of time. I have known the symptoms return a month after every appearance of the disease has been removed. However, in such cases they seldom last long. How far this second attack is to be looked upon as truly venereal, has not as yet been ascertained. Nothing can prove it absolutely to be venereal but the circumstance of having given it to a sound person. What may be the case with those in whom it has returned soon after the going off of the symptoms, I will not pretend to say; but I should very much suspect that, where the patient has continued well for a month, a return cannot be venereal. This is only conjecture; and if we were to reason upon it we might easily reason ourselves into a belief of its being venereal; for if the parts can fall back again into one mode of action, that of inflammation and suppuration, there can be no reason why they should not fall back again into the specific mode of action. However, as the common effect of irritation is suppuration, and as the specific suppuration requires a peculiar irritation, it is easier to conceive that the parts may fall into the common mode of action than into both. It is possible, however, that in such cases the venereal action may be only suspended, similar to what happens between the contamination and complete appearance of the disease.

In women, returns of the symptoms are more frequent than in men, particularly of the discharge; which being similar to the fluor albus, and frequently taken for that disease, gives less suspicion, although they are perhaps equally virulent as those in men.

The distinction between a gonorrhœa and a gleet is not yet ascertained; for the inflammation subsiding, the pain going off, and the

matter altering, are no proofs that the poison is destroyed. It is no more necessary that there should be a continuance of the inflammation to produce the specific poison than that there should be a continuance of the inflammation to produce the gleet, as will appear evident from two cases before related.¹

The first of these cases shows that the inflammation is not necessary to the existence of the venereal poison; and, on the contrary, the inflammation may exist after the matter discharged has ceased to be venereal. I have known cases where the inflammation and discharge have continued for twelve months, and with considerable violence; in the mean time a free intercourse with women has not communicated the disease. However, this is not an absolute proof that there is no virus in the discharge.

[RICORD.—A distinction between gonorrhoea and gleet, which Hunter would establish, is far from being admitted, in the same sense, by all writers on venereal.

As has been seen, Hunter, believing gonorrhoea virulent, thinks the principal difference between it and gleet, laying aside the greater mildness of the symptoms in the latter, consists in the entire absence of any virus in true gleet; but the reasons which he gives are far from convincing himself of the justness of this distinction. The presence or absence of a contagious property, can lead to no decided conclusion on this point.

Gleet is to gonorrhoea what the chronic stage, in inflammations in general, is to the acute stage. A virulent cause has no more to do with one than with the other; there is only a difference of intensity in the morbid state, whence result differences in the symptoms, and especially in the secretion, which is more or less purulent in the acute stage, and more or less mucous in the chronic.

By thus subjecting gleet to the general laws of catarrhal inflammations, we can explain, without any need of hypotheses, its liability to aggravations, to intermissions, and to fresh attacks. We discover a reason for the contagious or innocuous character of the morbid secretion, without being forced to admit the presence or absence of a virus. And whilst we emerge from the uncertainty in which Hunter leaves us, as well as if we adopt the rational doctrine of B. Bell, we arrive at the certain conclusion, that the more purulent the secretion is, the more it may act as a contagious principle, in virtue of its irritant properties; and that, on the contrary, it has no effect when it passes into the mucous stage. It is evident that a running, which has become innocuous, as last supposed, may become again contagious, on returning to the acute stage; and we can thus account for those cases which Hunter vainly endeavors to explain, and for the too guarded opinion of Wathely, who believes that a purely mucous discharge is still contagious.]

¹ *Vide* pages 76 and 77.

CHAPTER VIII.

OBSERVATIONS ON THE SYMPTOMS WHICH OFTEN REMAIN AFTER THE DISEASE IS SUBDUED.

It often happens, after the virus is destroyed, and the venereal inflammation removed, that some one, two, or more of the symptoms shall continue, and perhaps prove more obstinate than the original disease itself. Some of these symptoms shall continue through life, and even new ones shall sometimes arise as soon as the first have subsided. All these symptoms are commonly imputed by the patients themselves, and what is still worse, by some of the profession, to the original disease having been ill treated. But certainly, so far as we are yet acquainted with the disease and method of cure, this is not true; for the methods of treatment, though numerous, may be said to be very similar; and we shall find these symptoms not to be consequences of any one mode of treatment, but that they happen indiscriminately after them all. Yet I can conceive that many constitutions and particular parts often require one mode of treatment in preference to another, and probably require modes that we are not as yet acquainted with; but if these peculiarities of constitution or of parts are not yet known, which must often be the case, the practitioner is not to be rashly accused of ignorance.

In the Introduction, I observed that the venereal disease is capable of calling into action such susceptibilities as are remarkably strong, and peculiar to certain constitutions and countries; and that, as the scrofula is predominant in this country, some of the effects of gonorrhœa may partake of a scrofulous nature.

The symptoms which continue after the virus is gone do not owe their continuance to the specific qualities of the virus, but to its effects upon the parts, such as inflammation, and its consequences; for the same degree of inflammation, arising from any other cause, would leave most of the same effects. But I suspect that the continuance of the discharge called a gleet is an exception to this; for we find that it is often cured by the same mode of action which would produce the other symptoms, that is, inflammation; and we find in general that a discharge brought on by violence of no specific kind does not last longer than the violence, even although the cause has been continued for some time, as is often the case during the use of bougies.¹

¹ RICORD.—Because a discharge, which was produced by a mechanical irritant, as a bougie, for example, soon subsides after the removal of the cause, we are not forced to admit the presence of a specific cause, when the running continues for a longer time, independently of any mechanical irritation. Many other things are necessary besides the action of syphilitic virus, for a catarrhal inflammation to arise and run its course.

The first of the continued symptoms may be reckoned the remains of the disagreeable sensations excited by the original disease.

The second, the discharge called a gleet.

The third, the chordee.

The fourth, the irritable state of the bladder.

The fifth, the increase and hardness of the epididymis.

§ 1. *Of the Remains of the Disagreeable Sensations excited by the Original Disease.*

The disagreeable sensations which continue in the urethra and glans occur most frequently when the bladder has sympathized with the urethra during the disease; for then there are often the remains of the old shooting pains in the glans, or on its surface, which take their rise from the bladder. These, however, commonly go off, seldom being the forerunners of any bad symptoms, and therefore are not to be considered as part of the disease, but merely a consequence; yet they are often very troublesome and teasing to the patient, keeping his mind in doubt whether he is cured or not, which makes him frequently become the dupe of ignorant or designing men.

As these remaining sensations vary considerably in their nature, perhaps no one method of treatment will always be proper. I have known a bougie, introduced a few times, take off entirely the disagreeable sensation in the urethra; and I have known it to do no good. Gentle irritating injections, used occasionally, will often alleviate in some degree those complaints. A grain of corrosive sublimate to eight ounces of water makes a good injection for this purpose; but all such applications are in general no more than palliatives.

I have known the use of hemlock relieve the symptoms very much, and in some cases entirely cure them; while in many others it has not had the least effect.

A blister applied to the perineum will entirely cure some of the remaining symptoms, even when they extend towards the bladder, as will be explained hereafter; indeed, it appears to have more effect than any other remedy. A blister to the small of the back will also give relief, but not so effectually as when applied to the perineum.

The following cases are remarkable instances of this. A Portuguese gentleman, about twenty-five years of age, had contracted a venereal gonorrhœa, of which he was cured; but two years after, many of the symptoms still continued, and even with considerable violence. The symptoms were the following: a frequency in making water, and when the inclination came on he could not retain it a moment; a

The nasal mucous membrane is excited for a time by snuff; its sensibility and its secretion are increased; but there are other requisites for a regular coryza to take place, and these are assuredly not the presence of a specific cause. The same is true of gonorrhœa; without the necessary predisposing cause, the exciting cause, whatever it may be, has no effect. Take, as a proof, those persons, who run every risk of contagion with impunity; whilst in others, who have the necessary predisposition, the simplest cause: the catamenial flow, leucorrhœa, the introduction of a bougie, or an irritating injection, as in Swediaur's experiment, are sufficient to excite a discharge, identical with that of the most perfect gonorrhœa.—RICORD.

straining, and pain in the bladder after voiding it; a constant pain in the region of the bladder; a shooting pain in the urethra, which extended often to the anus; strange sensations in the perineum; a sense of weariness in the testicles; and if he at any time pressed his thighs close together the pain or sensation in the perineum was excited. It was supposed at Lisbon that he had the stone, and he came over to London for a cure of that disease. He was examined, but no stone was found. He was ordered to wash the external parts every morning with cold water, which he did for a fortnight, but found no benefit. I was consulted, and informed of all the above-mentioned circumstances. As a staff had been passed, there could be no stricture; however, I thought it was possible there might be a diseased prostate gland, and therefore examined him by the anus, but found that gland of its natural size and firmness. As there was no visible alteration of structure anywhere to be found, I looked upon the disease as only a wrong action of the parts, and therefore ordered a blister to be applied to the perineum, which being kept open only a few days all the symptoms were entirely removed. He retained his water as usual; all the disagreeable sensations went off; and the blistered part was allowed to heal. About a fortnight after, he got a fresh venereal gonorrhœa, which alarmed him very much, as he was afraid it might bring back all his former symptoms, which, however, did not return, and he was soon cured of the gonorrhœa. He stayed in London some time after, without any relapse.

Another case was that of a gentleman's servant in the country. He had, from a venereal cause, a disagreeable sensation whenever he made water, also a running, and some degree of chordee; which symptoms he had labored under for a considerable time. He had gone through a course of mercury, which lasted two months, on a supposition that the venereal virus had not been destroyed, but without benefit. He had after that been bled, used powders of gum Arabic and tragacanth, and taken calomel in small doses, with no better success. He then had recourse to injections and bougies of all kinds, but with no better success. On the ground of the symptoms not being venereal, but only wrong actions of the parts, a blister was applied upon the perineum, repeated and kept open six days, upon which the symptoms totally disappeared, and had not recurred a twelvemonth afterwards.

This practice is not only of service where there has been a preceding gonorrhœa, but I have found it remove, almost immediately, suppressions of urine from other causes, when the turpentine and opium, both by the mouth and anus, had proved ineffectual, and when the catheter had been necessarily introduced twice a day to draw off the water. But of this more fully hereafter.

Electricity has been found to be of service in some cases, and therefore may be tried either in the first instance, or when other means have failed.

[RICORD.—Continuance of the pain, after the cessation of a discharge, should render patients more guarded than usual, since, under such circumstances, a relapse is very easily brought on.

In some cases, the persistence of the pain constitutes a true nervous affection, a urethralgia, which may be continuous, irregular, or decidedly intermittent.

To the therapeutic agents mentioned by Hunter, the following should especially be added: small cold opiated enemata; frictions with laudanum, or extract of belladonna over the course of the urethra; passing these substances into the canal by means of a bougie, and, above all, following the advice of Professor Lallemand, of Montpellier, superficial cauterization of the canal with his instrument.

I have often succeeded in obstinate cases, by using a blister, sprinkled with morphia, and by giving sulphate of quinia, combined with camphor, when there was any appearance of intermittence.—RICORD.]

[EDITOR.—M. Vidal states that he has succeeded in obtaining speedy and complete relief in these neuralgic pains in the urethra following gonorrhœa, by a very simple means, viz.: compression of the penis. This is exercised by means of strips of sticking-plaster, half an inch wide, and just long enough to encircle the organ. They are first applied to the glans, and then continued up to the scrotum, each strip overlapping the preceding one. They should be applied as tight as possible, without interfering with the passage of the water, and should be continued after the pain has ceased, in order to prevent a relapse. This method is chiefly applicable to those cases in which the pain is situated in the spongy portion of the urethra.

M. Civiale states that one of the most efficacious remedies in this affection is the introduction into the canal of a soft bougie, of medium size, and leaving it there five or ten minutes. This should be repeated every day.

Many of these cases are dependent on the mental state of the patient, and require mental rather than physical treatment.]

§ 2. *Of a Gleet.*

Whatever method has been had recourse to in the cure of the venereal inflammation, whether injections have been used or internal medicines (mercurials, purgatives, or astringents), it often happens that the formation of pus shall continue, and prove more tedious and difficult of cure than the original disease. For, as I have already observed, the venereal inflammation is of such a nature as to go off itself, or to wear itself out; or, in other words, it is such an action of the living powers as can subsist only for a certain time. But this is not the case with a gleet, which seems to take its rise from a habit of action which the parts have contracted; and, as they have no disposition to lay aside this action, it of course is continued; for we find in those gonorrhœas which last long, and are tedious in their cure, that this habit is more rooted than in those which go off soon.

This disease, however, has not always the disposition to continue, for it often appears to stop of itself, even after every method has been ineffectually used. It is most probable that this arises from some

accidental changes in the constitution, not at all depending upon the nature of the disease itself.

I have suspected that there was something scrofulous in some gleet. We find frequently that a derangement of the natural actions of a part will be the cause of that part falling into some new disease to which there may be a strong tendency in the constitution. We find that a cold falling on the eyes produces a scrofulous weakness in those parts, with a considerable discharge. There are often scrofulous swellings in the tonsils from the same cause.

This opinion of the nature of some gleet is strengthened by the methods of cure; for we find that the sea-bath cures more gleet than the common cold bath, or any other mode of bathing. I have never yet tried the internal use of those medicines which are generally given in the scrofula; but I have found sea-water, diluted and used as an injection, cure some gleet, though it is not always effectual.

A gleet is generally understood to arise from a weakness; this certainly gives us no idea of the disease, and indeed there is none which can be annexed to the expression. By mechanical weakness, is understood the inability to perform some action or sustain some force. By animal weakness the same is understood. But when the expression is applied to the animal's performing an uncommon or an additional action, I do not perfectly understand it.

Upon this idea of weakness depended, in a great measure, the usual method of cure; but we shall find that the treatment founded on this idea is so far from answering in all cases that it often does harm, and that a contrary practice is successful.

A gleet differs from a gonorrhœa: first, in this, that though a consequence of it, it is perfectly innocent with respect to infection; secondly, when it is a true gleet, it is generally different in some of the constituent parts of the discharge, which consists of globular bodies, floating or wrapt in a slimy mucus, instead of a serum. But the urethra is so circumstanced as easily to fall back into the formation of pus; and this commonly happens upon the least increase of exercise, eating or drinking indigestible food, or anything which increases the circulation or heats the patient. The virus, however, I believe, does not return; but of this I am not certain, for there are cases that make it very doubtful; as was before observed.

I am inclined to suspect that a gleet arises from the surface of the urethra only, and not from the glands; for I have observed, in several instances, that when the passage has just been cleared, either by the discharge of urine or by the use of an injection, a lascivious idea has caused the natural slime to flow very pure, which I do suppose would not have happened if the parts secreting the liquor had assisted in forming the gleet.¹

¹ Added: "A gentleman has a gleet, occasionally attended with pain in making water; it is brought on by sitting in a postchaise, if he sits on the cushion, but not if he sits on a hard seat; in never comes on after riding on horseback, but he believes that riding upon a padded saddle would produce it."—HOME.

[Pathological anatomy has taught me, contrary to the idea which Hunter advances, that the same elements of the mucous membranes are affected in the chronic stage or gleet, and in the acute stage or gonorrhœa.—RICORD.]

A gleet is supposed to be an attendant upon what we call a relaxed constitution; but I can hardly say that I have observed this to be the case; at least, I have seen instances where I should have expected such a termination of a gonorrhœa, if this had been a general cause, but did not find it; and I have seen it in strong constitutions, at least in appearance, in every other respect. Gleet does not in all cases arise from preceding gonorrhœas, but sometimes from other diseases of the urethra. A stricture in the urethra is, I believe, almost always attended with a gleet. It sometimes arises from a disease in the prostate gland.

When a gleet does not arise from any evident cause, nor can be supposed to be a return of a former gleet in consequence of a gonorrhœa, a stricture or diseased prostate gland is to be suspected; and inquiry should be made into the circumstances of making water, whether the stream is smaller than common, whether there be any difficulty in voiding it, and whether the calls to make it are frequent. If there should be such symptoms, a bougie, of a size rather less than common, ought to be used, which, if there is a stricture, will stop when it reaches it; and if it passes on to the bladder with tolerable ease, the disease is probably in the prostate gland, which should be next examined. But more fully of both these complaints hereafter.¹

[G. G. B.—A gleet may arise from any source of irritation in any part of the urinary passages, or even in the neighborhood. Hemorrhoids are a frequent cause, and, in children, worms in the intestines. In like manner it may be occasioned by a calculus, or by other disease in the bladder or kidneys, and still more commonly, as the author has stated, by stricture in the urethra. But perhaps the most common cause, if we except stricture, is some derangement in the secretion of the urine, by which that fluid is rendered too acid or alkaline, and is converted into a perpetual source of irritation, occasioning various derangements of the urinary organs, and none, at least in those who have suffered from gonorrhœa, more frequently than gleet.

The cure of a gleet depends chiefly on the discovery, and the removal of the causes which excite it. While these continue, the effect of any remedies which are calculated to act directly on the discharge is generally inadequate, and at the best temporary. When the source of irritation, whatever it may be, is taken away, there is seldom much difficulty in repressing the excessive secretion from the urethra.

The same remark applies to leucorrhœa in women. This is very generally kept up by some uterine derangement, as amenorrhœa, or irritability of the os uteri. While this derangement subsists, no remedies are effectual; but if it is first corrected by appropriate treatment, the discharge may usually be arrested, without great difficulty, by a little perseverance in the use of the commonest astringents.]

¹ The passage of a bougie, with tolerable ease into the bladder, does not indicate a probable disease of the prostate as the cause of the continuance of the discharge, as Hunter asserts.—RICORD.

§ 3. *Of the Cure of Gleets—constitutionally—locally.*

As this discharge has no specific quality, but depends upon the constitution of the patient or nature of the parts themselves, there can be no certain or fixed method of cure; and as it is very difficult to find out the true nature of different constitutions or of parts, it becomes equally difficult to prescribe with certainty the medicines that will best suit this disease; for so great is the variety in constitutions, that what in one case proves a cure will in another aggravate the complaint.

There are two ways of attempting the cure of this complaint; constitutionally, or locally.

Medicines, taken into the constitution with a view to the cure of gleet, may be supposed to act in three ways; as specifics,¹ strengtheners, and astringents.

The specific power of internal medicines upon those parts is not very great; however, we find that some of them, such as the balsams, turpentine, and cantharides, are of use, especially in slight cases. I think I have been able to ascertain this fact, that when the balsams, turpentine, or cantharides are of service, they are almost immediately so; therefore, if upon trial they are not found to lessen, or totally remove the gleet in five or six days, I have never continued them longer. And even where they have either lessened or totally removed the gleet in that time, it will often recur upon leaving them off, and therefore they should be continued for some time after the symptoms have disappeared. I have known cases where the gleet has disappeared immediately upon the use of the balsam capivi, and recurred upon the omission of it; and I have also seen where that medicine has kept it off for more than a month, and yet it has recurred immediately upon laying it aside, and stopped again as quickly when the patient has returned to it. In such cases the other methods of cure should be tried. The balsams may either be given alone, or mixed with other substances, so as to make them less disagreeable.²

The general strengtheners of the habit need only be given when the parts act merely as parts of that habit. The whole being disposed to act properly, these parts are also disposed to act in the same way. By general strengtheners are here meant the cold bath, the sea bath, the bark, and steel. Astringents taken into the constitution, have no great powers; and if they had, they might be very improper, as anything that could act with powers in the constitution equal to what would be necessary here, might very much affect many natural operations in the animal economy. The astringent gums and salt of steel are commonly given.

The second mode of cure is by local applications. These may be divided into four, which are: specifics, astringents, irritating medicines, and such as act by derivation.

¹ It may be necessary to remark here, that by specific I do not mean a specific for the disease, but only such medicines as act specifically on the parts concerned, as the turpentine, cantharides, &c.

² Added: "I believe that the balsam of capivi cures a gleet more permanently than injections, its action being specifically upon the parts."—HOMÆ.

The specifics, applied locally, we may reasonably suppose will have greater effects than when given internally, because they may be applied stronger than can safely be thrown into the circulation. Of this, I think I have had experience.

The astringents commonly used are the decoction of the bark, white vitriol, alum, and preparations of lead. The aqua vitriolica cœrulea of the *London Dispensatory*, diluted with eight times its quantity of water, makes a very good astringent injection. The same observations that I made on the specifics are applicable to the astringents; I believe that they act nearly in the same manner, and have the same effect. What their mode of action is it is difficult to say.

When either of these methods has been used, and has had the desired effect, it should be continued for a considerable time after the symptoms have disappeared; and the time must be in proportion to the duration of the complaint, or the frequency of its returns. If it has been of long standing, we may be sure that the disposition to such a complaint is strong; and if it has returned frequently, upon the least increase of circulation, we may expect the same thing to happen again. Therefore, to correct the bad habit, it is necessary to continue the medicines a considerable time.

Irritating applications are either injections or bougies, simple, or medicated with irritating medicines. Violent exercise may be considered as having the same effect. Such application should never be used till the other methods have been fully tried and found unsuccessful. They differ from the foregoing by producing at first a greater discharge than that which they are intended to cure; and the increased discharge may or may not continue as long as the application is used. It becomes, therefore, necessary to inquire how long they are to be used to produce a cure of the gleet. That time will generally be in proportion to the violence used, and the nature of the parts which form the matter, and according to the disposition being strong or weak, joined to its duration, and the greater or less irritability of the parts. If the parts are either weak or irritable, or both, an irritating injection should not be used; if strong, and not irritable, it may be used with safety. In this last case, if it is an injection that stimulates very considerably, perhaps it may be sufficient to use it twice or thrice a day. I knew a gentleman who threw into the urethra, for a gleet of two years' standing, Goulard's extract of lead, undiluted, which produced a most violent inflammation; but when the inflammation went off, the gleet was cured. Two grains of corrosive sublimate to eight ounces of water are a very good irritating injection.

If it is a gleet of long standing, it may require a week or more to remove it, even with an irritating injection; and if the injection is less irritating, so as to give but little pain, and to increase the discharge in a small degree, it may require a fortnight. But one precaution is very necessary respecting the use of irritating injections; it should be first known, if possible, that they will do no harm. To know this may be difficult in many cases; but the nature of the parts is to be ascertained as nearly as possible; that is, whether they had ever been hurt before by such treatment; whether they are so susceptible of irritation as that

the irritation may be expected to run along the urethra and produce symptoms in the bladder, for in such cases irritating applications do not answer, but, on the contrary, often produce worse disorders than those they were meant to cure.

Bougies may be classed with the irritating applications, and in many cases they act very violently as such. They appear to be more efficacious than injections, but they require longer time to produce their full effect. A simple, or unmedicated bougie, is, in general, sufficient for the cure of a gleet, and requires a month or six weeks' application before the cure can be depended upon. If bougies are made to stimulate otherwise than as extraneous bodies, then a shorter time will generally be sufficient. Probably the best mode of medicating them would be by mixing a little turpentine, or a little camphor with the composition, so as to act specifically on the parts; but great care should be taken not to irritate too much.

The size of the bougie should be smaller than the common, and need only be five or six inches long, as it seldom happens that a greater extent of the urethra has a disposition to gleet; but no harm will arise from passing a bougie of the common length through the whole extent of the urethra.

In the cure of a gleet, attempted by means of the bougie, we have no certain rules to direct us when it should be left off, as the discharge will often continue as long as the bougie is used. If, upon leaving off the bougie, after the use of it for several weeks, the running ceases, then we may hope there is a cure performed; but if it should not be in the least diminished, it is more than probable that bougies will not effect a cure, and therefore it is hardly necessary to have recourse to them again. Yet, if the gleet is in part diminished, it will be right to begin again, and probably it may be proper to increase the irritating quality of the bougie, in order to suit it to the diminished irritability of the parts.

The fourth mode of cure is by sympathy, or by producing an irritation in another part of the body, which shall destroy the mode of action in the urethra.

I knew a case of obstinate gleet attended with very disagreeable sensations in the urethra, especially at the time of making water, removed entirely by two chancres appearing upon the glans. The patient had taken all the medicines commonly recommended, and had applied the bougie without effect.

A gentleman informed me that he had cured two persons of gleets by applying a blister to the under side of the urethra; and I have known several old gleets, after having baffled all common attempts, cured by electricity. All these different methods of cure alter the disposition of the part.

In whatever way the cure is attempted, rest or quietness in most cases is of great consequence; for, as I have observed, exercise is often a cause, not only of its continuance, but of its increase and return. But this idea is not to be too rigidly adhered to, especially in cases which have been treated unsuccessfully, as I have known some that have got

immediately well by riding on horseback after long disuse of that exercise.

Regularity and moderation in diet should be particularly attended to; for irregularities of this kind either hinder the cure or bring on a return of the disease.

Intercourse with women often causes a return, or increase of gleet, and in such cases it gives suspicion of a fresh infection; but the difference between this and a fresh infection is, that here the return will follow the connection so close as to be almost immediate, and that circumstance, joined with the other symptoms, will in general ascertain the nature of the discharge.

The cure of the gleet in women is nearly the same as in men, except in the use of what I have called specifics to the parts; for as the gleet in women is principally from the vagina, I believe that this part is not more affected by the turpentine than other parts are; but as the vagina is less irritable than the urethra in men, the astringents which are applied to it may be considerably stronger. Neither can we use the bougie in cases of gleet in the vagina; and when the gleet is only from the urethra, I imagine it is hardly ever attended to in women.

[RICORD.—Nothing is more common than the persistence of a discharge in the chronic stage, or, in other words, a gleet. It appears in some patients as a slight, but constant oozing of mucus, and in others, in the form of a drop, which is observed especially in the morning, and is commonly called the *goutte militaire*.

Besides those remedies, of which we have already spoken, and those which Hunter mentions, allow me to add some others, which my daily practice authorizes me to recommend.

Injectiōns.—Iodine is often successful in obstinate cases, after the pathological changes in the membrane have passed off; especially in that state of things, which Hunter understood so well, where scrofula seems to constitute part of the disease, or keep it up. In that case, injections are made of one drop of tincture of iodine to an ounce of distilled water. The quantity of the tincture is increased, following the rules which I have laid down before, until the discharge is stopped, or its increase under the treatment compels us to suspend the injections.

Under the same circumstances, in a number of obstinate cases, I have employed successfully a solution of the proto-iodide of iron, commencing with a grain to an ounce of distilled water.

Meshes.—A new mode of treatment has also yielded me numerous favorable results. I have elsewhere laid down the rule that one of the first requisites for the cure of inflammation of the mucous membranes is to isolate them, and prevent their walls coming in contact. In urethral gonorrhœa, this is of more importance than protecting the walls of the urethra from contact with the urine. But the disadvantages resulting from the painful introduction of foreign bodies in the acute stage surpass the benefit derived, but they cease to exist in the chronic stage; and, when other means have failed, I often employ with success a mesh of dry linen, introduced into the canal by means of an India rubber canula and a stylet. This mesh is left in place until the next emission

of urine, when it is renewed, and is repeated in the same way up to the time of cure, which takes place in seven or eight days, or later.

These meshes, which I use at first in a dry state, may also be smeared with medicinal substances. You may also supply their place, as M. Crespiat does, with little cylindrical bags of gold-beater's skin, which are first introduced empty, by means of a stylet placed within, and afterwards distended with air or water.

Bougies and Sounds.—Bougies and sounds often cure cases of gleet which are refractory under every other mode of treatment. These instruments, either simple or medicated, may be introduced, from time to time, or may be worn permanently.

In some cases, in order to produce the desired result, it is sufficient to pass a bougie once or twice a day, and leave it in the urethra a few minutes. But the cure does not always take place in the same manner. Generally, the morbid secretion is augmented at first, the instrument acting as an irritant, as Hunter remarks; whilst in some, perhaps the rarer cases, it insensibly dries up, without being previously increased. As soon as the morbid secretion is sufficiently revived, or stops, the use of the instrument must be suspended; in the first case, it might keep up or aggravate the disease; or, in the second case, bring it back again, after having cured it.

When the discharge continues *in statu quo*, under the simple introduction of bougies, gradually increased in size, or, if too much irritation results from passing them repeatedly, we should direct them to be worn constantly. In this way, also, we obtain a gradual cessation of the discharge in the rarer cases, or else we excite a copious and decided suppuration, which compels us to suspend the treatment, after which a permanent cure generally follows.

When bougies and sounds exert no decided action, they may succeed better smeared with a little weak or strong mercurial ointment, and continued until an increase in the discharge is produced. We may obtain a very good effect by using an ointment made of one grain of nitrate of silver to a drachm of cerate.

Cauterization.—The most active treatment of obstinate gleet is cauterization with nitrate of silver, following the rules which I have elsewhere laid down. In some cases, the discharge is confined to a few follicles, with longer or shorter excretory ducts, which escape the action of the above mentioned remedies, unless they are within view, as is the case in different varieties of hypospadias. In the latter case, we may lay them open with a lancet or cataract-needle, and cauterize them.

Regimen.—It is well to mention, in this place, that the regimen, contrary to Hunter's advice, should be tonic and strengthening, instead of being as strict as before; noticing, however, the effect produced, so as to modify it more or less, as may be necessary.

Derivatives.—Although I agree with Hunter on the effects of derivatives in general, I must say, after collecting statistics on a large scale, that I have never seen the development of a chancre cause a gleet to stop, and *vice versa*.

Internal, or Constitutional Treatment.—In the latter stages of a dis-

charge, various forms of iron and astringents may have a good effect; but much less reliance can be placed on true anti-blennorrhagics. Direct treatment should be preferred.

Coitus.—Sexual intercourse is often the final requisite for a cure. In some patients, coitus at intervals is sufficient; in others, a little irritation should be excited by its repetition.

The requisite for success, in the majority of cases, is to make the chronic pass into the acute stage for a time.—RICORD.]

§ 4. *Of the Remaining Chordee.*

This symptom, I have already observed, often remains after every mark of the true virus is removed, and may or may not be attendant on any of the other continuing symptoms.

Mercurial ointment applied to the part may be of service, and, if joined with camphor, its powers will be increased. I have known electricity cure a chordee of long standing. If it is the spasmodic chordee that remains, bark should be given.

§ 5. *Of the Continuance of the Irritation of the Bladder.*

The irritation of the bladder sometimes continues after every other symptom has ceased, and it may be an attendant upon all or any of the other continuing symptoms; it seldom lasts with the same violence, although it is often very troublesome. When this irritation is kept up with the same violence, the bladder itself may be suspected of being diseased; or it may arise from its connection with other parts, such as the urethra, or prostate gland; for a stricture in the urethra coming on, will prove the cause of its continuance, and a disease in the prostate gland will do the same.

Neither of these diseases will probably follow the gonorrhœa so closely as to keep up this irritation, though perhaps they may have been taking place prior to the gonorrhœa, and so contribute to its increase and continuance, which may probably be ascertained by a history of the patient preceding the present complaint; however, before the bladder itself is attempted to be cured, a bougie should be passed, and if no stricture is found, then the prostate gland should be examined, as shall be described.

When the disease is in the bladder only, I think the pain is principally at the close of making water, and for a little while after. The cure of this symptom consists in opiate clysters, cicuta, bark, sea-bathing, and I should be inclined to recommend the application of a blister to the perineum in men. How far opiate clysters can affect the bladder in women as they do in men, I am not certain.¹

¹ The irritation of which Hunter is here speaking, continues especially at the neck of the bladder, and it is rare for the body of this organ to participate in it. When ordinary means fail, cauterization with nitrate of silver may be employed with great chances of speedy success.—RICORD.

§ 6. *Of the Remaining Hardness of the Epididymis.*

This symptom I have observed remains long after every other symptom is removed, and may continue even for life; but seldom or ever any bad consequences happen from it if the vas deferens is not rendered impervious; and not even then if it is only in one testicle, the other being equal to all the purposes of generation. As this is the case, we must at once see that no certain method of resolution is yet known. The application of the steam of hot water with camphor may be tried, especially in such cases as are not disposed to be permanent; and the scrotum may be rubbed with mercurial ointment, joined with camphor. But in most cases this practice will prove too tedious, or rather too inefficacious to be long persisted in.

[RICORD.—After gonorrhœal epididymitis, it often happens that the epididymis remains engorged and indurated, or at least hypertrophied. The cauda of the epididymis especially maintains an increased volume. As Hunter remarks, it generally does no harm; but, under some circumstances, this continued abnormal development of the epididymis is due to a strumous diathesis, and is only the prelude or exciting cause of tubercular sarcocoele, which is so common and so frequent.

Indeed, tubercular sarcocoele succeeds gonorrhœal epididymitis so frequently, that, in Germany, this tubercular affection is considered a specific consequence of a gonorrhœal virus. This, again, is a mistake. Tubercular degeneration in this case differs in no respect from what it is under any other circumstances.

I cannot speak of tubercular sarcocoele without remarking on an extraordinary idea lately advanced by M. Vidal (de Cassis), who says that, when only one testicle is affected, the tubercles are malignant; that is to say, that tubercles are to be feared elsewhere, or, in other words, a tubercular diathesis exists; whilst, if the two testicles are affected, nothing farther is to be dreaded.

A person must be ignorant of the laws of tuberculosis in general, and of tubercular sarcocoele in particular, to advance a like assertion before such a body as the Surgical Society.

I lately exhibited to the Academy of Medicine¹ two cases of tubercular affection of the urethra, which, during life, gave rise to a symptomatic gonorrhœal discharge in subjects who presented at the same time tubercles in the prostate, *in the two epididymes*, in the bladder, in the ureters, in the kidneys, and in the lungs.]

[EDITOR.—Both vasa deferentia may become obliterated and produce sterility, as a consequence of gonorrhœal epididymitis, as shown by the researches of M. Gosselin. See Part III. Chap. VIII.]

¹ Bulletin of the Academy of Medicine, Paris, 1850, vol. xv. p. 565.

The first of these is the fact that the United States is a young nation, and its history is therefore a history of growth and development. The second is the fact that the United States is a large nation, and its history is therefore a history of expansion and conquest. The third is the fact that the United States is a diverse nation, and its history is therefore a history of conflict and compromise. The fourth is the fact that the United States is a nation of immigrants, and its history is therefore a history of assimilation and integration. The fifth is the fact that the United States is a nation of pioneers, and its history is therefore a history of exploration and discovery. The sixth is the fact that the United States is a nation of inventors, and its history is therefore a history of innovation and progress. The seventh is the fact that the United States is a nation of leaders, and its history is therefore a history of vision and leadership. The eighth is the fact that the United States is a nation of heroes, and its history is therefore a history of courage and sacrifice. The ninth is the fact that the United States is a nation of dreamers, and its history is therefore a history of hope and aspiration. The tenth is the fact that the United States is a nation of believers, and its history is therefore a history of faith and conviction. The eleventh is the fact that the United States is a nation of doers, and its history is therefore a history of action and achievement. The twelfth is the fact that the United States is a nation of builders, and its history is therefore a history of construction and creation. The thirteenth is the fact that the United States is a nation of thinkers, and its history is therefore a history of reflection and contemplation. The fourteenth is the fact that the United States is a nation of feelers, and its history is therefore a history of emotion and passion. The fifteenth is the fact that the United States is a nation of learners, and its history is therefore a history of education and enlightenment. The sixteenth is the fact that the United States is a nation of seekers, and its history is therefore a history of quest and pursuit. The seventeenth is the fact that the United States is a nation of givers, and its history is therefore a history of generosity and compassion. The eighteenth is the fact that the United States is a nation of fighters, and its history is therefore a history of struggle and resistance. The nineteenth is the fact that the United States is a nation of peacemakers, and its history is therefore a history of harmony and reconciliation. The twentieth is the fact that the United States is a nation of dreamers, and its history is therefore a history of vision and leadership.

PART III.

CHAPTER I.

OF DISEASES SUPPOSED TO ARISE IN CONSEQUENCE OF VENEREAL INFLAMMATION IN THE URETHRA OF MEN.

THE gonorrhœa produces, or at least is supposed to produce, besides those disorders already mentioned, many others which are totally different from the original disease. How far they do all or any of them arise in consequence of this disease, is not clear; but as they are diseases of the urethra, and are both numerous and important, I mean to treat fully of them in this place. If any of these diseases arise from a gonorrhœa, they are most probably not the consequences of any specific quality in the venereal poison, but are such as might be produced by any common inflammation in those parts, as was observed of the *continued symptoms*.

In this investigation, we shall find some of the complaints arising out of each other, so that there is frequently a series of them. Thus, a stricture of the urethra produces an irritable bladder, a frequent desire to make water, increased strength of the bladder, a dilatation of the urethra between the bladder and stricture, ulceration, fistulæ in perinæo, dilatation of the ureters, and enlargement of the pelvis of the kidneys; besides other complaints that are sympathetic, such as swellings of the testicle, and of the glands in the groin. I shall treat of the diseases of those parts in the order in which they most commonly arise.

It may be observed that most of these diseases, especially the diminution of distensibility in the bladder, attack men advanced beyond the middle age; although many, if not all of them, are at times found in younger subjects; and the circumstance of their appearing at this period arises probably in some degree from a long habit of an unnatural mode of life producing many diseases, such as gout; for certainly such complaints do not so frequently take place among the more uncivilized nations.

The most frequent disease in the urethra is an obstruction to the passage of the urine; it happens both in young and old, although most frequently in the latter. Before I begin to treat of this subject, I shall, for the better understanding of the whole, make some observations on the uses of this passage in its natural state.

It may first be observed, that the urethra in man is employed for two purposes. On this occasion I may be allowed to make the following general remark, that nature has not been able to apply any one part to two uses with advantage, as might be illustrated in many instances in different animals. The animals whose legs are contrived both for swimming and walking, are not good at either; as seals, otters, ducks, and geese. The animals also whose legs are intended both for walking and flying, are but badly formed for either, as the bat. The same observations are applicable to fish, for the flying fish neither swims nor flies well; and whenever parts intended for such double functions are diseased, both are performed imperfectly. This is immediately applicable to the urethra, for it is intended as a canal or passage both for the urine and the semen. The urine requires the simplest of all canals, and of no greater length than the distance from the bladder to the external surface, as we find the urethra in women, birds, the amphibia, and fish; but the passage for the semen in the quadruped requires to be a complicated canal, and of a length capable of conveying the semen to the female, provided with many additional and necessary parts, as the corpus spongiosum urethrae, muscoli acceleratores, Cowper's glands, prostate gland, and vesiculæ seminales. As all these parts are to serve the purposes of generation, and as the diseases of this canal are principally seated in them, we at once see how much the urinary organs must suffer from a connection with parts so numerous and so liable to disease; and what adds to the evil is, that the actions of the urinary organs are constant, and absolutely necessary for the well-being of the machine, whereas the evacuation of the semen takes place only during a certain portion of life, is then only occasional, and never essentially necessary to the existence of the individual. The force of this observation is at once seen by making the comparison between the inconveniencies that attend the expulsion of the urine in the male and in the female.

The canal of the urethra is liable to such diseases as are capable of preventing in some degree the passage of the urine through it; and in some of these diseases the passage at last becomes completely obstructed. In all cases there is a diminution of the size of the canal, but in different ways. There are five modes of obstruction, four of which are diseases of the passage itself; the fifth is a consequence of the diseases of other parts. Three of the former are a lessening of the diameter of the passage; the fourth an excrescence in the passage; the fifth arises from the sides being compressed, which may be done either by exterior contiguous swellings, or by a swelling of the prostate gland.

[RICORD.—Strictures of the urethra are sometimes simply spasmodic, but are more commonly due to an organic change in the canal; or, in somewhat rarer cases, they depend on affections of the neighboring parts, or on different combinations of these conditions.

I. SPASM.—It is with reason that Hunter, as well as all good observers, admits the existence of strictures without any alteration of tissue. Indeed, daily observation affords instances of such, not only at the neck of the bladder, and in the membranous or muscular por-

tion of the urethra, but in every other part of the canal, where they are the result of a kind of tonic action.

Irregular in the time of their manifestation, in their situation, their progress, their duration, their final cessation, and their reappearance, we cannot, in every case, readily specify the immediate or the predisposing cause of spasmodic strictures; but even if a plausible explanation were not found in the constitutional and local irritability of some individuals, and in the muscular structure of certain regions, experience would still furnish proof of their existence, which no ingenious theoretical reasoning could overthrow.

II. ORGANIC CHANGES.—Most strictures are undoubtedly due to a change either in the surface of the canal, or in the substance of its walls.

First Variety. Alteration of the Surface.—Strictures may be caused by ulcerations with salient edges, such as I have shown at my clinique; or with surfaces more or less fungous, as was observed some time ago by Brunner and Mery.

In certain cases, which are more common than some modern writers suppose, the urethral canal is obstructed, and its area encroached upon by true vegetations (the caruncles and carnosities of the ancients), whose existence is denied by Morgagni, Desault, and others, but rightly admitted by Hunter, Bell, André, and Baillie. These vegetations may exist in any part of the canal, even posterior to the verumontanum, as stated by Lobstein, Wegelin, and even Sœmmerring. I have met with some well-developed examples at the meatus urinarius, where they are very common in both sexes; in the fossa navicularis, of which I have lately shown a specimen at my clinique; in the membranous and prostatic portions in the same subject, who died at the Hôpital des Vénériens. In women, these vegetations are still more common. M. Amusat cites an example, and out of a large number of cases, which I might report, I have elsewhere mentioned a very remarkable instance.¹

Laënnec thought that plastic exudations might form on the mucous membrane of the urethra, and, after becoming organized, give rise to false membranes, capable of obstructing the canal.

Since the works of Brunner and Mery, numerous observations, which go to support the opinion of Littre, have placed the frequent existence of cicatrices in different parts of the urethra beyond a doubt. Ulcerations, varying in their nature and situation; lacerations, such as occur in chordee; other solutions of continuity, produced by various causes, such as catheters, external violence, etc., and the loss of substance by gangrene are often followed by cicatrices, which contract the urethra and shorten it in some cases, or give rise to prominences on its surface, such as connecting bands, projecting points, valvular depressions, or diaphragms varying in size, form, and extent.

Hypertrophy and engorgement of the folds of the urethra, especially those at the neck of the bladder, may also form projections, analogous to those which depend on cicatrices; but the latter are limited and remain stationary, while the former may increase in consequence of

¹ Practical Treatise on Venereal Diseases, Paris, 1838, p. 691.

the continuance of the morbid state to which they are due, but are susceptible of resolution when this ceases.

We find also on the mucous membrane of the urethra vascular growths of various sizes, which diminish its calibre to a certain extent. Whether we adopt the explanation of these varicose enlargements given by Sœmmerring, Larbaud, and others, or not, they are more common in the posterior part of the canal, and at the opening of the neck of the bladder, where they represent a kind of hemorrhoidal state. They are also not unfrequently observed anterior to certain strictures, as a consequence of the obstruction which these exercise to the return of the blood.

Some patients in this state, after having trouble in passing their urine, find their stream restored after a discharge of blood occurring spontaneously, or following the passage of a sound.

Second Variety. Alterations in the Walls of the Canal.—Engorgement of the whole thickness of the urethral walls, and of the muscular fibres which encircle certain portions, as the neck of the bladder, are also a frequent cause of strictures. But this engorgement does not always present the same form; circumscribed or diffuse, it occupies either one point, or the whole circumference of the urethral walls; and, as in other tissues, it is combined with softening or induration. True fungous degeneration sometimes results from it; whilst, in numerous cases, callosities assuming a fibrous condition ensue.

But there is one morbid alteration, which the theories in vogue have prevented from receiving its due attention; I mean those engorgements, more common than people think, dependent upon the *specific induration*, which often attends a chancre in the urethra, as well as in other regions. These indurations which constitute a large number of strictures, generally resist ordinary local treatment, or become aggravated under the influence of mechanical remedies, but yield with astonishing facility, in some cases, to a well-directed antisyphilitic treatment.

Cancer or scrofula may cause swellings of the urethra and produce strictures.

III. AFFECTIONS EXTERNAL TO THE CANAL.—The most common affections which proceed from parts external to the urethra, and distort or constrict it, are inflammation of the neighboring cellular tissue, terminating in suppuration, causing a loss of substance, and producing cicatrices; or inflammation, followed by indurations in the form of nodosities or rings, which cause a deviation in the canal, elevate its walls, or strangle it completely. Next in order come the swellings and diseases of the prostate, which, according to the common notion, account for most of the real or apparent changes in the calibre and direction of the deeper portions of the urethra. And, finally, we have contractions of the muscular fibres, which line what has been called the pyloric valve of the neck of the bladder. This peculiar arrangement of the mucous membrane and the muscles of this region, has been studied especially by M. Mercier, in a work published in 1841. It must not be confounded with the valvular projections of the prostate,

which Mr. Guthrie calls the *transverse bar*, and M. Leroy d'Etiolles the *prostatic collur*.

It is also clear that everything capable of acting on the exterior of the canal, and of becoming fixed in its cavity, may, to a certain extent, be a cause of stricture.

IV. COMPOUND CAUSES.—The morbid states, which I have mentioned, may exist alone, or else, uniting in various ways, give rise to compound strictures.—RICORD.]

§ 1. *Of Strictures.*

The first three I shall now consider, of which the first is the true permanent stricture arising from an alteration in the structure of a part of the urethra. The second is a mixed case, composed of a permanent stricture and spasm. The third is the true spasmodic stricture. Most obstructions to the passage of the urine, if not all, are attended with nearly the same symptoms, so that there are hardly sufficient marks for distinguishing the different causes. Few take notice of the first symptoms of a stricture till they have either become violent, or have been the cause of other inconveniences. For instance, a patient shall have a considerable stricture without observing that he does not make water freely; he shall even have, in consequence of a stricture, a tendency to inflammation, and suppuration in the perineum, and not feel any obstruction to the passage of his urine, nor suspect that he has any other complaint than the inflammation in the perineum. In all of these obstructions the stream of water becomes small, and that in proportion to the obstruction; but this symptom, though probably it is the first, is not always observed by the patient. In some, the water is voided only in drops, and then it cannot escape notice; in others, the stream of urine is forked or scattered: under such circumstances, the passage should be examined with a bougie; and if one of a common size passes with tolerable ease, the fifth cause of obstruction is to be suspected, which will most probably be found to be a swelled prostate gland; for any other cause that can produce a compression of the sides of the urethra sufficient to obstruct the urine, will be known to the patient, such as a tumor forming anywhere along the canal, or an inflammation along its sides. If, therefore, neither of these is known to exist, the prostate gland should be examined, as will be described hereafter.

The spasmodic obstruction will commonly explain itself when the symptoms are well investigated, for the obstruction arising from this cause will not be permanent. These obstructions, but more particularly that from a permanent stricture, are generally attended with a discharge of matter or a gleet. This is often considered by the patient as the whole disease, and he applies to the surgeon for the cure of a gleet. The surgeon often perseveres in attempting the cure of this disease; but, no success attending him, at last other symptoms are observed, and a stricture is suspected, either by the surgeon or patient. In diseases of this passage, and also of the prostate gland and bladder, there is commonly an uneasiness about the perineum, anus, and lower

part of the abdomen, and the patient can hardly cross his legs without pain.

[RICORD.—The above general sketch of the symptoms and differential diagnosis of the varieties of stricture admitted by Hunter, is evidently very incomplete, and leaves more to be supplied than is suited to the compass of a note; hence I will indulge in only a few reflections.

Hunter makes the remark, which many persons have repeated, that the jet of urine diminishes in proportion to the size of the stricture. This assertion is substantially true, but is not, however, absolutely so. In some patients, the jet is tolerably large, and yet a sound of small diameter cannot pass the stricture; others, on the contrary, in consequence of inertia of the bladder, projection of the valve at its neck, or too great tonic action of the canal, have a very small stream, or only pass their water drop by drop, though a sound meets with no obstacle in the urethra. The distance to which the stream is thrown is explained in the same way.

The bifurcation of the stream has not the same value as a diagnostic sign in every case. Some mucosity arrested in the canal may form a plug for a time, or cause the walls to adhere at some points, so as to divide the jet of urine in its passage; but, in that case, the jet, which was bifurcated at the commencement of emission, immediately becomes straight again after it has brought away the mucosity. On the contrary, when the bifurcation of the jet is due to a stricture of the canal, it continues during the whole time of emission, or at least appears at first, and perhaps disappearing at the moment when the bladder exerts its greatest contractile power, reappears toward the end of emission.

In the latter case, bifurcation indicates either a projection into the canal, or a permanent adherence of the urethral walls at some point of its course. I showed a patient, at my clinique, the sides of whose canal were adherent from right to left, for the extent of an inch back of the fossa navicularis; thus resembling a double-barrelled gun, or two superposed cannon. In this patient, there were two perfectly distinct jets. This adherence was easily destroyed by dividing it.

Other changes in the stream, such as a scattering or spiral form, are not always rightly interpreted. For these changes to have any value as symptoms, they must take place at the meatus; for it is well known that a more or less decided spiral motion takes place in the jet, at variable distances from the meatus, according to the force with which the urine is expelled by the bladder through a sound urethra.

Hunter says scarcely anything on exploration of the canal, and yet this is the most certain means of diagnosis. Exploration may be made with conical or cylindrical bougies, and with flexible, soft, or solid sounds. We may employ exploring instruments adapted to taking an impression of the stricture, and called *porte-empreintes*. The exploration may be made from before backwards, or from behind forwards.

It often happens, when we suspect stricture in a patient, that a fine bougie is arrested where a large instrument enters; sometimes, with a straight instrument, we think we meet with an obstacle, which is soon

passed by a curved instrument. Where a stiff instrument is stopped, a flexible one, even of larger size, passes without difficulty; so that, until every mode of exploration has been tried, especially in the posterior regions of the urethra, we cannot conclude that there is a stricture. I will say the same of impressions taken by Ducamp's method; as M. Amussat justly remarks, the instrument is sometimes stopped at points where there is no stricture; and, what is still worse, in the bulbous and posterior portions of the canal, impressions may be obtained where no alteration of tissue exists. Exploration from behind forwards, by means of the lenticular explorer of M. Amussat, or M. Tanchou's probe-pointed stylet precursor, does not possess all the accuracy that is attributed to it. However, some strictures may be recognized by M. Amussat's method on their first appearance. The flexible bougies, with olive-shaped or spherical points, invented by M. Leroy d'Etiolles, are valuable instruments for exploration of the portions of the urethra in front of the prostate. In the exploration of the prostatic portion and the neck of the bladder, great advantage may be derived from M. Mercier's sound with a short beak curved almost at a right angle.

Laying aside the phenomena which take place in respect to the emission of the urine and the ejaculation of the semen, our certainty of the existence of a stricture depends entirely either on an absolute impossibility of introducing the different explorators above enumerated, or on their being grasped by the urethra, when introduced within the narrowed portion.

A constant gleet, a consequence of chronic inflammation, which is the precursor of most strictures, is particularly obstinate after the appearance of the latter, and may even increase from inflammation of the tissues situated immediately behind the constricted parts, which therefore tend to contract still farther in this direction.

Yet, if an obstinate discharge from the urethra, however slight, is sufficient to lead us to suspect the existence of a stricture, we must beware of believing all adhesions of the lips of the meatus, the least flake of mucus, or the threads which float in the urine of some patients, to be incontestable proofs of a stricture, as M. Amussat asserts, even when the most careful exploration has failed to discover anything.—
RICORD.]

CHAPTER II. . .

OF THE PERMANENT STRICTURE.

IN the permanent stricture (see Plate I. Fig. 1), the patient seldom complains till he can hardly procure a passage for the urine; and frequently has a considerable degree of strangury, and even other symptoms that happen in stone and gravel, which are therefore too frequently

supposed to be the causes of the complaint. The disease generally occupies no great length of the passage; at least, in most of the cases that I have seen, it extended no farther in breadth than if the part had been surrounded with a piece of packthread, and in many it had a good deal of that appearance. I have, however, seen the urethra irregularly contracted for above an inch in length, owing to its coats or internal membrane being irregularly thickened, and forming a winding canal.

A stricture does not arise in all cases from an equal contraction of the urethra all round, but in some from a contraction of one side, which probably has given the idea of its having arisen from an ulcer on that side. This contraction of one side only throws the passage to the opposite side, which often renders it difficult to pass the bougie. The contracted part is whiter than any other part of the urethra, and is harder in its consistence. In some few cases there are more strictures than one. I have seen half a dozen in one urethra, some of which were more contracted than others; and, indeed, many urethras that have a stricture, have small tightnesses in other parts of them. This we learn from the successive resistance felt in passing the bougie.

Every part of the urethra is not equally subject to strictures, for there appears to be one part which is much more liable to them than the whole of the urethra besides, that is, about the bulbous part. We find them, however, sometimes on this side of the bulb, but very seldom beyond it. I never saw a stricture in that part of the urethra which passes through the prostate gland;² and the bulb, besides being the

¹ Ducamp says that we generally find only one or two strictures in the same subject, and he is right. Yet Hunter met with six, M. Lallemand, of Montpellier, seven, and Colot, whose veracity on this point has always been called in question, says that he has observed eight. The students following my clinique at the Hôpital des Veneriens, have seen a patient, who had been an inmate of other hospitals of the capital, and whose urethra was contracted throughout its whole extent, with here and there a break; there were also ten fistulous openings, the most anterior on one side of the frænum, and the others scattered along the spongy portion of the canal, and in the vicinity of the bulb and the perineum. Since the publication of the first edition of this work, I have met with two cases in which the urethra resembled a string of beads between the fossa navicularis and the perineum. The canal in its whole extent could be traversed only by a bougie eight hundredths of an inch in diameter, and the yard was constantly in a state of semi-erection.—RICORD.

² RICORD.—It is true that strictures in the neighborhood of the bulb are the most common of all; and it has even been said that, when there are several, one of them is always found in this region. Yet this rule has so many exceptions, in the anterior portions of the urethra, that I am surprised that M. Civiale has met with only two cases. As to the prostatic portion of the canal, in which Hunter says he never met with strictures, it may be asserted, in spite of the observations of Bell, and the denial of Semmerring, that it is sometimes the seat of contractions, which are not a result of disease of the prostate, and many other cases might be added to the one reported and figured by M. Crosse.

Moreover, unless the observations are made after death, it is quite difficult to ascertain the exact depth of strictures, whatever instruments are employed. Sometimes, as M. Civiale justly remarks (*Practical Treatise on the Diseases of the Genito-urinary Organs*, Paris, 1850, vol. i.), we depress the obstruction and push it from the meatus urinarius; in other cases, resting our instrument on the stricture, we artificially elongate the penis for the time, or its length may have been increased by the habitual traction which some patients exercise upon it in their suffering from retention of urine. Exploration of the canal in a relaxed state, according to M. Malgaigne's method, is seen to be just as imperfect, when we consider the power of retraction of the virile organ under the influence of the mind, pain, and cold.

Mr. Phillips's method, which consists in measuring the whole length of the urethra

most frequent seat of this disease, has likewise strictures formed there of the worst kind. They are generally slow in forming, it being often several years from their being perceived before they become very troublesome.

The same stricture is not at all times equally bad, for we find that in warm weather it is not nearly so troublesome as in cold. These changes are often very quick. A cold day, even an hour of cold weather, shall produce a change in them; and the same stricture is almost always worse in winter than in summer. However, this observation is not free from exceptions; I knew one case that was always worse in the summer. There are other circumstances besides cold that make a stricture worse. A gentleman who had an ague, always found the stricture increased during the fit. It is also increased by drinking, violent exercise, and by the retention of urine after an inclination to void it has been felt. This last cause is often so great as to produce a total stoppage for a time. It is sometimes rendered much worse by a small calculus passing from the bladder, of the formation of which this stricture was probably the cause. The calculus not passing, will produce a total stoppage of urine, the cause of which can hardly be known at the time, and if known it could not be remedied without an operation. (See Plate IV.)

It is impossible to say what is the cause of that alteration in the structure of the urethra which diminishes the canal; it has been ascribed to the effects of the venereal disease, and often to the method of cure. But I doubt very much if it commonly, or even ever, arises from these causes; yet, as most men have had venereal complaints some time or other, it is natural to ascribe the stricture to them, and therefore it may be very difficult to refute this opinion. Many reasons, however, can be given why we should suppose that it is not commonly a consequence of a venereal inflammation. Strictures are common to most passages in the human body; they are often to be found in the œsophagus; in the intestines, especially the rectum; in the anus; in the prepuce, producing phimosis; in the lachrymal duct, producing the disease called fistula lachrymalis, where no disease had previously existed. They sometimes happen in the urethra, where no venereal complaint has ever been. I have seen an instance of this kind in a young man of nineteen, who had the complaint for eight years, and which therefore began when he was only eleven years of age. It was treated at first as stone or gravel. He was of a scrofulous habit, the lips thick, the eyes sore, a thickened cornea of one eye, and the general habit weak. The stricture was in the usual place, about the membranous part of the urethra. I have seen an instance of a stricture in the urethra of a boy of four years, and a fistula in perinæo in consequence of it. They are as common to those who have had the gonorrhœa slightly as those who have had it violently.

I knew a young gentleman who had a very bad stricture. He had

by means of a catheter, which allows the urine to flow as soon as it has passed the neck of the bladder and gives the posterior limit of the canal, is just as liable to error.—RICORD.

had several gonorrhœas, but they were so slight that they seldom lasted a week, nor in any of them did the pain extend beyond the frænum; but the stricture was about the membranous part. Cases of this kind occur every day. They are never found to come on during the venereal inflammation, nor for some time after the infection is gone. There have been thirty, and sometimes forty years between the cure of a gonorrhœa and the beginning of a stricture, the health being all that time perfectly good. If they arose in consequence of the venereal inflammation, we might expect to find them of some extent, because the venereal inflammation extends some way; and we should also expect to find them most frequent in that part of the urethra which is most commonly the seat of the venereal disease. But I remarked before, that they are not so frequent there as they are in other parts of the urethra.

It is supposed by many that strictures arise from the use of injections in the cure of the gonorrhœa; but this opinion appears to be founded in prejudice; for I have seen as many strictures after gonorrhœas that have been cured without injections as after those cured with them.

Such modes of accounting for strictures give no explanation of those where there has been no previous gonorrhœa, or where the gonorrhœa has not been cured by injections; and, indeed, if we consider the mode of cure of strictures, we must see that an injection is a mild application to the urethra compared to a bougie; yet a bougie has never been supposed or known to be the cause of a stricture. Farther, some have injected by mistake, very irritating liquors, such as the undiluted extract of lead, and caustic alkali, without giving the least tendency towards a stricture, although they produced violent inflammation and even sloughing of the internal membrane of the urethra.

By many they have been supposed to have arisen from the healing of ulcers in the urethra; but as I never saw an ulcer in these parts, except in consequence of a stricture, and as I do not believe there ever is an ulcer in the case of a common gonorrhœa, I can hardly subscribe to that opinion.

[G. G. B.—Many well authenticated facts disprove the common prejudice which attributes stricture invariably to gonorrhœa or to the use of injections. But when the author goes so far as to question whether it ever arises from these causes, his opinion is contradicted both by reason and by experience. It would appear that any irritation on the urethra, if sufficiently long continued, may give rise to stricture. It may be consequent on stone in the bladder, on disease of the prostate or disease of the bladder, on acid urine, on repeated attacks of strangury occasioned by the application of a series of blisters. But of all sources of irritation which can affect the urethra, the most common and the most severe is gonorrhœa, and hence a large proportion of cases of stricture follow so immediately on this disease as to be justly attributable to it. There are few cases of gonorrhœa in which the stream of urine is not diminished in size, from the existence of some degree of spasmodic contraction in the membranous portion of the

canal. If the gonorrhoea lasts long, this spasm may become habitual, and terminate in stricture; and the likelihood of such a result is much increased if the inflammation is not confined to the extremity of the urethra, but extends to the bulb and neck of the bladder.

How far injections have a tendency to produce the same effect is more doubtful. When they are successfully used on the first appearance of the discharge, it is probable that, by cutting short the disorder, they rather prevent than promote stricture. But where injections fail, they unquestionably in many cases extend the sphere of the inflammation, and involve those parts of the urethra which are in the vicinity of the bulb, and are especially liable to this affection. Again, the discharge, as the author has elsewhere observed, relieves the spasm of a stricture. In cases where there exists already spasmodic contraction of the urethra, injections, by diminishing or arresting the discharge, will undoubtedly tend to increase the spasm and to render it permanent.

The old opinion was, that a stricture was the cicatrix of an ulcer which existed during a gonorrhoea. This notion the author justly repudiates. But he must not be understood to mean that ulceration may not sometimes arise from other causes, and leave behind it a stricture. When the urethra has been lacerated by external violence, as by a blow on the perineum, stricture will usually follow, and will, in most cases, be of a kind which is peculiarly intractable and obstinate.—G. G. B.]

[RICORD.—It is very certain that gonorrhoea is not the only cause of stricture. I lately showed a young man at my clinique, twenty-five years old, who had been troubled with dysuria from early youth, and yet he had never had any discharge, and his symptoms could not be explained by the presence of a foreign body. This young man, on entering the hospital, had a stricture in the posterior part of the urethra, and the most careful examination could not detect any vice of conformation or pathological alteration of the prostate. I have under my care at the present moment a young man at Versailles who is similarly affected, with this difference only, that he has a callous stricture of the membranous portion.

But, though other causes are capable of producing strictures of the urethra, it is incontestably true, that the most frequent causes are the so-called venereal diseases, among which gonorrhoea should be ranked first.

Gonorrhoea, which, as we have elsewhere proved, is not a virulent disease, identical with chancre, produces changes in the urethra and consequently strictures, either in its acute stage, contrary to what Hunter says, or, more commonly, in its chronic stage.

Indeed, nothing is more common than to meet with various degrees of dysuria and even more or less complete retention in the acute stage of urethritis; and this sometimes even during the first few days of the disease; thus are caused those strictures which are called inflammatory. These strictures are the consequence of an engorgement, which is, to a certain degree, phlegmonous in its character, or of an œdematous infiltration of the submucous cellular tissue. They disappear on the

cessation of the acute stage; but it is not uncommon to see them last and become permanent, by passing into the chronic stage, together with the inflammation which produced them. They generally occupy a considerable surface, and are met with most commonly in parts anterior to the bulb; and the earlier they occur in the disease, the nearer they are to the meatus. If we assigned any value to this situation, which Hunter regards as specific, these strictures would be the immediate consequence of the virulent affection; but it has been seen from what I have previously said, that inflammation of the urethra, commencing in the anterior portion and extending to the posterior, does not change its nature because it changes its seat; and if those alterations of tissue which give rise to strictures are more common behind than before, it is because the chronic inflammation persists there longer than anywhere else.

In the acute stage, such engorgements are more or less soft, easily torn, and vascular; but if the inflammation continue a short time, it produces induration of the mucous membrane, and especially of the subjacent tissue. These indurations are sometimes combined with permanent hypertrophy; but it must be confessed that the diseased parts commonly become atrophied, or contract, as if the canal were constricted by a cord. In the latter case, the affected part presents only a fibrous tissue, the result of capillary phlebitis, which causes the obliteration and transformation of the vessels in the substance of the mucous membrane and subjacent tissues, as M. Mercier has very well shown.

If Hunter had been less influenced by his theoretical views, and had recognized the frequent existence of urethral chancres, he would have found, as I have, strictures due to specific induration, and directly dependent on the virulent affection.

Nothing is more destitute of proof than the assertion that gonorrhœal inflammation is driven backwards by the use of injections; for it is well known that, independently of this cause, the disease left to itself soon involves the posterior parts of the canal.

Again, when injections favor resolution of the engorged tissues, and gradually dry up a discharge, far from adding to the inflammatory or spasmodic symptoms, they cause them to diminish and disappear at the same time with the suppuration. Contrary cases are exceptions. As to ulcerations, it is not necessary for me to repeat what I have already said; pathological anatomy has placed their existence beyond a doubt, and the same is true of the cicatrices, which are a consequence of them. —RICORD.]

§ 1. *Of the Bougie.*

The bougie, with its application, is perhaps one of the greatest improvements in surgery which these last thirty or forty years have produced. When I compare the practice of the present day with what it was in the year 1750, I can scarcely be persuaded that I am treating the same disease. I remember when, about that time, I was attending the first hospitals in this city, the common bougies were either

a piece of lead,¹ or a small wax-candle; and, although the present bougie was known then, yet a due preference was not given to it, or its particular merit understood, as we may see from the publications of that time.

Daran was the first who improved the bougie and brought it into general use. He wrote professedly on the diseases for which it is a cure, and also of the manner of preparing it; but he has introduced so much absurdity in his descriptions of the diseases, the modes of treatment, and of the powers and composition of his bougies, as to create disgust. However, this absurdity has been much more effectual in introducing the bougie into universal use than all the real knowledge of that time, directed by good sense, could have been. Such extravagant recommendations of particular remedies are not at all times without their use. Inoculation would have still been practised with caution had it not been for the enthusiasm of the Suttons. Preparations of lead would not have been so universally applied if they had not been recommended by Goulard in the most extravagant terms; nor would the hemlock have come into such general use if its true merits only had been held forth. Improvements are often overrated, but they come to their true value at last. Sutton has told us that the cold regimen, in extreme, is infinitely better than the old method; but from general practice we have learned that moderation is best, which is all we yet know.

When Daran published his observations on the bougie, every surgeon set to work to discover the composition, and each conceived that he had found it out, from the bougies he had made producing the effects described by Daran. It never occurred to them that any extraneous body, of the same shape and consistence, would do the same thing.

§ 2. *Of the Treatment of the Permanent Stricture.*

The cure of the permanent stricture is, I believe, to be accomplished only by local applications. Mercury has been given, upon the erroneous supposition of its being venereal, but without success. The cure is either a dilatation of the contracted part, or a destruction of it by ulceration or escharotics. The dilatation is performed by the bougie, and this is seldom or never more than a temporary cure; for, although the passage may be dilated sufficiently for the urine to pass, yet there is always the original tendency to contraction, which generally recurs sooner or later.² The ulcerative process is also effected by a bougie,

¹ When lead was used in place of bougies it has happened that a piece of the end has broken off in the bladder, which has been dissolved by injecting quicksilver. I at first suspected that quicksilver could not come in contact with lead while in water, so as to dissolve it; but, upon making the experiment, I found it succeeded.

² In cases of stricture, when a patient applies for relief, it may often be proper to inquire into the history of the case previous to the passing of a bougie, especially to inquire if he ever used bougies before; if he has, then to inquire into the result; if they passed readily, or if they did not pass the stricture at all; if the first, then nothing farther need be asked; but if the last, then to inquire if he or his surgeon observed that they were gaining ground with the bougie, viz: if the bougie went farther in before it was left off than at first; if so, then ask him how far. If they have

and the destruction by escharotics is by means of caustics. It often happens, in strictures, that the passage is so diminished as hardly to allow any water to pass, producing often a total stoppage; nor will a bougie immediately pass; and if it can be made to pass, yet no water follows it when withdrawn. In such cases, therefore, we must have recourse to the means that afford a temporary relief, such as the warm bath, which counteracts the effects of cold, and quiets any spasms that may have taken place in the parts, and clysters with opium, which have still more effect. Producing an evacuation by stool often lessens the spasm, for a spasmodic suppression of urine frequently arises from a constipation, even where there is no stricture.

The cure by dilatation is, I imagine, principally mechanical when performed by bougies, the powers of which are, in general, those of a wedge. However, the ultimate effect of them is not always so simple as that of a wedge upon inanimate matter, for pressure produces action of the animal powers, either to adapt the parts to their new position, or to recede by ulceration, which gives us two very different effects of a bougie, and of course two different intentions in applying them: one to produce dilatation, the other ulceration, which last is not always so readily effected.

It generally happens, as has been already observed, that the disease has gone considerable lengths before application has been made for a cure, and, therefore, the stricture has become considerable, insomuch that it is often with great difficulty that a small bougie can be made to pass. If the case is such as will readily admit the end of a small bougie to pass, let it be ever so small, the cure is then in our power. It often happens, however, that the stricture is such as will resist the passing of a small bougie at first, and even after repeated trials. Yet it is necessary to persevere with the small bougie, for sometimes it happens that the passage through the stricture is not in a line with the urethra itself, which of course obstructs the bougie; such strictures, I suspect, are not equally placed all round, so as to throw the small passage remaining into the centre of the canal.

In many cases, where the stricture is very considerable, much trouble is given by occasional spasms, which will either resist the bougie altogether, or only let a very small one pass, though at another time they will admit one larger. In such cases, I have been able to get the point of the bougie sometimes to enter, by rubbing the perineum externally with the finger of one hand, while I pushed the bougie on with the other. This, though it does not always succeed, yet is worth the trial. Whether it alters the position of the stricture, so as to give entrance to the point of the bougie, or by sympathy removes the spasm, I will not absolutely determine, but I believe it rather acts by sympathy. In such cases of spasm in the stricture, I have often succeeded by letting the bougie remain a little while close to the stricture, and then pushing it on; this mode so often succeeds, that it should always

visibly gained ground without getting through the stricture, I am afraid that the use of the bougie must not be pursued, because it is most probable that a new passage has been formed, which makes the passing of the bougie into the stricture impossible.

be attempted when the bougie does not pass, or only passes occasionally. This will be mentioned more fully when we shall consider the spasmodic stricture.

The spasm may probably be taken off by dipping the glans penis into cold water, which succeeds sometimes in the common strangury; but this cannot be so easily done while a bougie is in the passage.

In cases of a permanent stricture, though the bougie does not at first pass, yet, after repeated trials, it will every now and then find its way, which helps to render a future trial more certain and easy. It, however, too often happens that the future success does not immediately depend upon passing the bougie once or twice, for it shall pass to-day and not to-morrow; and this uncertainty shall last for weeks, notwithstanding every trial we can make; yet I may observe that, in general, its introduction becomes gradually less difficult, and, therefore, in no case should we despair of success. It is imagined by some that the best time for trial in these cases is just after making water, as the passage is supposed to be clear, and more in a straight line; but this is not confirmed by practice.

It is not an easy matter, in cases where the passage is very small, to know whether the bougie has entered the stricture or not, for such slender bougies as must generally be used at first bend so very easily that the introducer is apt to think it is passing, while it is only bending. A surgeon, however, should, in general, first make himself acquainted with the situation of the stricture by a common-sized bougie, and afterwards make use of a smaller one, and when he comes to the stricture, push gently, and for a little time only. If the bougie has passed farther into the penis, he will know how far it has entered the stricture by taking off the pressure from the bougie, for if it recoil, he may be sure that it has not passed, at least has not passed far, but only bent; for the natural elasticity of the bougie, and the direction of the passage having been altered by it, will force it back again. But if it remain fixed, and do not recoil, he may be sure that it has entered the stricture.

In using a very small bougie, however, these observations are not so applicable, for it may be bending, or bent, without being perceptible. It often happens that a bougie will enter only a little way, perhaps not more than one-tenth of an inch, and then bend if the pressure be continued. To determine whether this be the case, it is necessary to withdraw the bougie and examine its end; if the end be blunted, we may be sure the bougie has not entered in the least; but if it be flattened for an eighth or tenth of an inch, or grooved, or have its outer waxy coat pushed up for that length; or if there be a circular impression made upon the bougie where the stricture is, or only a dent on one side, both of which last I suspect arise from spasm at the time, we may then be sure that it has passed as far as these appearances extend. It becomes, then, necessary to introduce another exactly of the same size, and in the same manner, and to let it remain as long as the patient can bear it, or convenience will allow; and by repeating this we may overcome the stricture. Sometimes we can judge of its having entered the stricture, by pulling it gently out; for if it stick a

little at the first pull, we may be certain it has entered; but the appearance of the bougie itself will give the best information.¹ In such cases I have always directed my patient to preserve the bougie for my inspection, exactly in the same form it was when it was withdrawn. But when it passes with ease, this nicety is not necessary.

The time that each bougie ought to remain in the passage must be determined by the feelings of the patient; for it should never give pain, if possible. To go beyond this point is to destroy the intention, to increase the very symptoms that are meant to be relieved, and to produce irritation, which for a time renders the farther application of the bougie improper. While the bougie is passing, if the patient feel very acutely, it should not be left in the urethra above five or at most ten minutes, or not so long if it give great pain; and each time of application should be lengthened so gradually as to be insensible to the feelings of the patient and the irritability of the parts. I have known it days, nay, in many patients, weeks, before they could allow the bougie to remain in the passage ten or even five minutes, and yet in time they have been able to bear it for hours, and at last without any difficulty. The best time to let it remain in the passage is when the patient has least to do; or in the morning, while he is in bed, provided he can introduce it himself.

The bougie should be increased in size according to the facility with which the stricture dilates, and the ease with which the patient bears the dilatation. If the parts are very firm or very irritable, the increase of the size of the bougie should be slow, gradually stealing upon the parts, and allowing them to adapt their structure to the increased size. But if the sensibility of the parts will allow of it, the increase of the size of the bougie may be somewhat quicker, though never more quick than the patient can bear with ease. The increase should be continued till a bougie of the largest size passes freely; nor should this be laid aside till after three weeks or a month, in order to habituate the dilated part to its new position or to take off the habit of contracting from the part as much as possible. But, as was observed before, the permanency of this cure can seldom be depended upon.

Instead of proceeding with the caution recommended, it has been practised with success for a time to force a common sized bougie through a stricture that only allowed a small one to pass. This, I suppose, either tore the stricture or weakened it by stretching it suddenly so as to render it unable to recover its contractile power for a considerable time after. I have seen where this has produced good

¹ It may be remarked that there are some lacunæ (*vide* Plate I. Fig. 2) near and also a little way from the glans penis, which often stop the bougie, and give at first the idea of a stricture. I have known them taken for such; and when the bougie stops so near to the glans this is to be suspected, therefore we should vary the direction of the point of the bougie, bearing it against the under side of the urethra. When the bougie stops in one of those lacunæ, I think that the patient appears to have more pain than from a real stricture. The valvular part of the prostate gland formed by disease (*vide* Plate V.), very often obstructs the bougie, and is taken for a stricture by those who are not well acquainted with the different obstructions in this canal; and by those who are, it is a means of discovering disease in this part; and, indeed, in a natural state of parts, I think I can ascertain when I come to this part with a bougie.

effects, and for a time removed the permanent stricture and prevented spasm. This is a practice, however, which I have never tried, having always preferred the mild treatment where I could pass a bougie.

I have known the passing of the bougie remove, almost immediately, a swelling of the testicle, which had arisen from the stricture; therefore such a symptom should not prevent the use of the bougie.

In cases of strictures where the bougie is used, the patient is commonly in other respects well, and is with difficulty persuaded to restrain from his common habits, often making too free in eating, drinking, and exercise; which are all in many cases pernicious, more especially where inflammation and suppuration have taken place. It is, therefore, the duty of the surgeon to restrict the patient for some time within certain bounds, till he finds by trials what the parts are capable of bearing without producing inflammation.

[RICORD.—We cannot consider every case of stricture of the urethra as a morbid state, which necessarily requires treatment. Some strictures are the final termination of diseases of the urethra, and are to this canal what cicatrices, or union of the parts, are to other tissues in general. In such cases the direction of the urethra may be altered or its caliber diminished; but if no morbid discharge, and no excessive disarrangement of its functions result, and the neighboring parts, such as the prostate, the spermatic passages, the bladder, etc., do not suffer, there is no necessity, because the canal has lost a quarter or half a line of its diameter, to apply treatment which is often more injurious than useful. I know that the earlier strictures are attacked, the sooner they are cured; but to make this a general rule, we must take exception in favor of those kinds of stricture which may be called *final*.¹

Strictures should be subjected to treatment, therefore, only when they tend to increase or when they interfere with the direct functions of the urethra, and those of the neighboring organs connected with it.

Hunter, as may be seen, and many other authors who have imitated or servilely copied him, direct only local applications in the treatment of permanent strictures. And yet various circumstances connected with the individual, such as his general strength or weakness, an inflammatory or nervous temperament, etc., may furnish indications for local or general treatment other than that required for the simple destruction of the obstacle in the canal. Complications or diseases of the organs, whose functions are more or less connected with the urethra, also require important modifications. But above all, that kind of stricture which forms the most absolute exception to Hunter's rule, is that stricture which depends on the specific induration of a chancre, and which is generally refractory under local treatment, but yields to the constitutional remedies employed for indurated chancres.

We must divide the treatment of strictures, then, into general and local. The first may be simple, and directed against the inflammation,

¹ For an instance of literary piracy, see the chapter on Strictures, in Acton on Diseases of the Urinary and Generative Organs, page 84 of the American edition, where page after page is copied from these notes of M. Ricord, without the slightest credit being given.—Ed.

spasm, different complications, etc.; or special, and intended to oppose the specific cause of the disease, as in indurated chancres. The second comprehends simple resolvents, dilatation, caustics, the use of instruments for superficial and deep scarifications, incisions, etc.

Resolvents.—Most inflammatory strictures, or those occurring in the acute stage of gonorrhœa, yield to general or local antiphlogistics; but they are often cured by the simple use of resolvents, both at this period and especially when they have passed into the chronic stage, unless too deep changes in the tissues have already taken place. Thus, resolvent ointments, especially mercurial ointments, succeed very frequently when they are applied externally or within the canal to those engorgements, which may even sometimes be felt externally without the need of any other exploration.

If, in every case of morbid discharge from the urethra, the state of the tissues had been ascertained beforehand, as I have many times done at my hospital and in my private practice, physicians would be convinced that a large number of strictures due to soft hypertrophy, yield to resolvent injections, which are wrongfully accused of producing them when they happen to fail.

Dilatation.—We may, however, say with truth that the majority of strictures resist these means, and require others which are more active; among which we must first mention dilatation, as Hunter does. Dilatation is the treatment which is the most generally applicable; which succeeds the best of all; and which, in the majority of cases, is the necessary adjuvant of other means.

Not forgetting Hunter's excellent practical observations, so often copied and given as original, we may thus sum up the subject of dilatation in the present state of science:—

1. Dilatation may be *sudden*, as in the method attributed to the ingenious surgeon of Lausanne, Mayor, although it was previously mentioned, without approbation, by Hunter. Its principle consists in *attacking the stricture with an instrument, which is the more voluminous the more difficult the stricture is to overcome.*

2. Dilatation may be *rapid*; that is to say, an instrument is first used which passes the stricture without violence; it is then replaced by others, of increasing diameter, as fast as the previous instrument ceases to be grasped by the stricture. This method, which has been extolled especially at Montpellier, by MM. Lallemand, Chrestien, &c., has received some commendation at Paris from Professor Velpeau, although most practitioners, and particularly Hunter, censure it, and often with justice, on account of the frequent relapses which follow it.

3. It is better that dilatation should be *gradual*; experience having proved, in accordance with Hunter's views, that the result is more permanent when it has been obtained slowly and with little violence. Béniqué's method¹ has certainly sprung from Hunter's precepts.

4. Finally, dilatation is *temporary* or *permanent*. As a curative treatment, dilatation has a favorable and permanent effect only in stric-

¹ Béniqué's method "consists in introducing a small bundle of fine bougies into the urethra, and pushing each one successively until the one opposite the opening in the stricture is introduced."—ED.

tures due to simple hypertrophy, combined especially with softening of the tissues. When the induration is well marked and callous, when there are inodular or fibrous degenerations, true cicatrices, or vegetations, success is less durable; we then only stretch the parts, which soon recover their former state when we cease to separate them.

In making use of gradual dilatation within the bounds which Hunter so well marks out, we must regard the following rules, in order to decide between its temporary or permanent application.

Temporary dilatation should be preferred whenever the reintroduction of a bougie is not too difficult or too painful; whenever the instrument ceases to be grasped in a short time by the stricture; and whenever, in successive visits, it may not only be replaced with facility, but a larger one substituted for it.

When the contrary is true, permanent dilatation must be employed.

In every case, as soon as an instrument which is left in temporarily or permanently, irritates too much, produces spasm, pain, or direct or sympathetic reaction, it must be removed, and not introduced again until repose and appropriate accessory treatment have caused the supervening symptoms to disappear.

In all cases where dilatation is used, it acts like compression, and produces simple resolution of the tissues, or excites a kind of purulent dissolution. It sometimes tears the diseased parts, as in M. Mayor's method, or else it causes ulceration, which is not always favorable, owing to the immediate effects mentioned by Hunter, or to the *cicatrices*, which are the necessary and sometimes injurious consequence of it.

To perform dilatation, the dilating instrument must, of necessity, penetrate within the stricture. But this is not always easy or even possible to effect. Without dwelling in this place on the rules for catheterization, which should be followed, in order to pass the stricture, I will recall the judicious remark of Hunter on the undoubted advantage of compression of the anterior portion of strictures which cannot be passed; a rule to which Dupuytren attached so much importance, and which no modern writer can censure, except for want of knowledge how to suitably apply it. Indeed, whatever theory we adopt, whether of a disgorgement by pressure, a purulent dissolution, or a progressive destruction by ulceration of the tissues at the constricted point, it is incontestably true that, without the stricture being passed, the scanty emission of urine returns to its normal state under the influence of this treatment, and the symptoms of retention disappear long before the instrument reaches the bladder.

Cauterization.—(See page 188.)—RICORD.]

§ 3. *Of the Cure of Stricture by Ulceration.*

The cure of a stricture by means of ulceration is likewise effected by a bougie. This method may be employed both in cases where a bougie will and where it will not pass. In the first case there is not the same necessity for ulceration as in the second, because where a bougie will pass there is no immediate danger arising from the stric-

ture, which may therefore be dilated, as has been already described. But if this method should be preferred to a slow dilatation, which allows the parts time to adapt themselves to their new position, the stricture may be destroyed by producing ulceration in the parts, especially if they are not irritable, but admit of considerable violence.

When this is intended, the bougie should be introduced as far into the stricture as possible, and the size of it increased as fast as the sensations of the patient can well bear. This will produce ulceration in the part pressed, which is a more lasting cure, because more of the stricture is destroyed than when the parts are simply dilated. I believe, however, there are few patients that will submit to this practice, and indeed few will be able to bear it; for I have seen it bring on violent spasms in the part, which have produced suppression of urine, and proved very troublesome. Therefore, as there is no absolute necessity in such cases for pursuing this method, I do not recommend it as a general practice, although there have been cases in which it has succeeded. Where this method is to be practised, it might probably be right to accustom the passage to a bougie for some time before such violence is used.

If the smallest bougie which can possibly be made cannot be made to pass by some degree of force, dilatation becomes impracticable, and it is necessary that something else should be done for the relief of the patient; for the destruction of the stricture must be effected. In many cases it may be proper to attempt this by ulceration of the part; for we find from experience that a stricture may be removed by the simple pressure of a bougie. This effect must arise from the irritation of absorption being given to the diseased part, which, from the stricture not being an originally-formed part, nor having any power of resistance equal to the original one, is more susceptible of ulceration, and thereby is absorbed. The bougies, which are only to produce ulceration in consequence of their being applied to the stricture, need not be so small as in the former cases, as they are not intended to pass; and by being of a common size they will also be more certain in their application to the stricture. The force applied to a bougie in this case should not be great; for a stricture is the hardest part of the urethra; and if a bougie is applied with a considerable degree of pressure, and left in the passage, it sometimes happens that the end of it slips off the stricture before there is time for ulceration, and makes its way into the substance of the corpus spongiosum by the side of the stricture; and if the pressure be continued still longer, it will make a new passage beyond the stricture in the corpus spongiosum urethræ.¹ This more readily happens if the stricture be in the bend of the canal, as in such cases the bougie can hardly be applied exactly to it, not having the same curve. Such mischief I have seen more than once; and sometimes the bougie has been pushed so far as to make its way into the rectum.

It often requires a considerable time before the whole is so far ulcerated as to admit the bougie, and this tires the patient, and almost makes

¹ Vide Plate II.

him despair of a cure. In this process, great attention should be paid to the seeming progress of the cure; for if it appears to the surgeon that he is gaining ground by the bougie passing farther in, and yet the patient does not make water better in the least, then he may be sure that he is forcing a new passage.¹

When the stricture has so far yielded to these means as to admit a small bougie, the dilatation is to be made as in the former case where a bougie passed at first. Whenever a bougie of a tolerable size passes with ease, and the parts and patient have become accustomed to it, it is no longer necessary that the surgeon should continue to pass it; the patient may be allowed to introduce bougies himself; and when he can do it readily the business may be trusted to him, as he can make use of them at the most convenient times, so that they may be applied longer at a time and oftener, the surgeon only attending occasionally. This practice of the patient under a surgeon's eye, by which he is taught how to pass them, becomes more necessary as strictures are diseases that commonly recur; and therefore, no man who has ever had a stricture, and is cured of it, should rely on the cure as lasting, but should be always prepared for a return; and should always have some bougies by him. He should not go a journey, even of a week, without them; and the number should be according to the time he is to be absent, or to the place whither he is going, for in many parts of the world he cannot be supplied with them. The bougies for such purpose should be of different sizes, as it is uncertain in what degree the disease may return.

Bougies, in all cases, from their shape and from the action of the parts, readily slip out, whereby the cure is retarded; but it is much worse when they pass into the bladder, which can only take place in cases where the stricture is in some measure overcome. The consequence of a bougie passing into the bladder must at once appear in its fullest force to every one; it subjects the patient in most cases to be cut as for the stone; and, indeed, if it is either not soon thrown out or cut out it becomes the basis of a stone. A young man was cut for a bougie only a fortnight after it had passed into the bladder, and it was almost wholly crusted over with calculous matter. Bougies have been known to be forced out of the bladder along with the water by the action of that viscus, and in several folds. It is probable that the bladder in a natural state has not power sufficient to perform such an action; but we shall show that in cases of strictures where the resistance to the passing of the water is very much increased, the strength of the bladder becomes proportionably greater. This happens principally in strictures of long standing.

Such accidents are often observed before the outer end of the bougie has got beyond the projecting part of the penis, but even then it is difficult of extraction. I have succeeded in some of these cases by fixing the bougie in the urethra some way below its end; for instance, in the perineum, by pressing against it with one hand, and pushing

¹ This makes it necessary, in all cases of strictures where bougies will not pass, to be very particular in our inquiries whether the patient has used bougies formerly, and whether there may not be reason to believe that they had taken a wrong direction.

back the penis upon the bougie with the other hand; then laying hold of the penis upon the bougie, removing the pressure below, and drawing the whole up; and, by performing these two motions alternately, I have been able to lay hold of the end of it. However, this does not always succeed; for when the bougie is either small, or becomes soft, it will not admit of the penis being pushed down upon it without bending; or if the thick end of the bougie has got beyond the movable or projecting part of the penis, then this mode of treatment becomes impracticable. I have succeeded in these last cases with the forceps for extracting the stone out of the urethra; but if it has got into the bend of the urethra, this practice will also fail; and in such a state it would be most advisable to pass a catheter down to it, and cut upon that; and probably the above-mentioned forceps, introduced through the wound, might then lay hold of its end; or by cutting a little farther, so as to expose some part of the bougie, it might be easily extracted, without the necessity of cutting into the bladder. This part of the operation, however, would be very difficult in a fat or lusty man.

To prevent the inconvenience of the bougie coming out, or the mischief of its passing in, it is necessary to tie a soft cotton thread round that end of the bougie which is out of the urethra, and then round the root of the glans. This last part should be very loose, for an obvious reason; and the projecting part of the bougie should also be bent down upon the penis, which makes it both less troublesome and more secure.

[RICORD.—The fall of a bougie or a sound into the bladder, although it has sometimes occurred, is however a rare occurrence. To prevent such an unpleasant accident, it is sufficient, in most cases, to have the external end of the bougie armed with the rim of sealing-wax, which is usually applied, and which prevents it passing the meatus urinarius; or else, when the bougies are made of soft wax, their extremity may be bent like a hook over the glans, or a rim may be formed by winding thread around it. However, when a better arrangement is desired, it is always preferable to attach the strings of the sound to a suspensory bandage, or to use a ring, as Dupuytren did: I prefer the former. In this way, the changes of volume in the penis are left perfectly free, and no constriction exercised or pain excited.

Yet, in case an instrument should fall into the bladder, there would be less occasion to resort to lithotomy, at the present day, than in Hunter's time. The recent improvements in the extraction of foreign bodies from the bladder introduced by MM. Civiale, Leroy d'Etiolles, Amussat, Heurteloup, Ségalas, etc., would be sufficient, in the majority of cases, to remove it.]

§ 4. *Of the Application of a Caustic to Strictures.*

When a bougie can readily pass, there is no necessity for using any other method to remove the stricture; but there are too many cases where a bougie cannot be made to pass, or so seldom that it cannot be depended upon for a cure. This may arise from several causes. First, the stricture may be so tight as not to allow the smallest bougie to pass.

Secondly, the orifice in the stricture may not be in a line with the urethra, which will make it uncertain, if not impossible, to pass a bougie. Thirdly, there may be no passage at all, it having been obliterated by disease, and the urine discharged by fistulæ in perinæo.

The first very rarely occurs; for if the passage in the stricture be in a line with the general canal, a small bougie will commonly pass; and, although it may not readily do so upon every trial, it will be sufficient to make way for another bougie, which is all that is wanted.

The second case, where the canal is not in a line with the common passage, may arise from three causes. First, when the stricture is in the bend of the urethra, although the passage through it may be in the centre of the canal, yet as the bougie cannot have the exact curve, it will be very uncertain in its application. Secondly, from an irregularity in the formation of the stricture, which may throw the passage to one side, even in the straight part of the urethra; and thirdly, from ulceration having taken place, producing fistulæ in perinæo, which often make the canal irregular in its course.

The third case where the application of the caustic may be necessary is where there is no passage at all, which happens from ulceration and abscesses in the perineum opening externally; and in the healing of them the passage is often closed up entirely. In all the above-mentioned cases I have succeeded with the caustic beyond expectation.

If the obstructions are anywhere between the membranous part of the urethra and the glans, where the canal is nearly straight, or can easily be made so by the introduction of a straight instrument, it becomes an easy matter to destroy them by caustic; but if beyond that, it becomes then more difficult. However, at the beginning of the bend of the urethra the obstruction may be so far removed as to admit of the passing of a bougie, or at least to procure a tolerably free passage for the urine. I have seen several cases where it was thought necessary to follow this practice; and it succeeded so well that after a few touches with the caustic the bougie could be passed, which is all that is wanted. The success in these cases was such as would incline me to have recourse to this practice very early; indeed, whenever I could not pass a small bougie through the stricture. I look upon the caustic as a much safer method than using pressure with a bougie, for the reason before mentioned, that is, on account of the danger of making a new passage, without destroying in the least any part of the obstruction.

Most of the strictures which I have examined after death appeared to have been in the power of such treatment. However, I have seen one or two cases where the contraction was of some length and irregular, which would have puzzled me if I had attempted the cure with the caustic; because I should have been apt to suspect that I was making a new passage by my gaining ground, and yet not relieving the patient by the removal of the symptoms.

I have often tried this practice in strictures where there were also fistulæ in the urethra, and where the water came through different passages. Such cases were not the most favorable, yet I have succeeded in the greater part of them: that is, I overcame the stricture, and could pass a bougie freely. I have seen several cases of fistulæ

of these parts where the natural passage was obliterated by the stricture, in which I have succeeded with the caustic, and the fistulous orifices have readily healed.

It does not happen always, in cases of obstruction to the passage of the urine, that when the obstruction is removed by the caustic, and the water of course passes freely, a bougie will also pass. This, I apprehend, arises from the caustic not having destroyed the stricture in a direct line with the urethra, so as to allow a bougie to catch the sound urethra beyond. But this appears to me of little consequence, as it is as much in the power of the bougie to prevent a return at this part as if it had passed on to the bladder; for if the water flows readily, it is certain that the caustic has gone beyond the stricture, although it may not be in the direct line, and that the only risk of a return of obstruction will be at the old stricture; but as a bougie can now pass beyond that part, it does as much good as if it passed into the bladder; for I have known several cases where the bougie appeared to have the same effect as if it had passed on to the bladder.

The application of the caustic need not be longer than a minute, and it may be repeated every day, or every other day, allowing time for the slough to come off. But there are other causes that may prevent the repetition of the caustic, besides waiting for the separation of the slough; for sometimes the use of it brings on irritation, inflammation, or spasm in the part, which frequently occasions a suppression of urine for a time, against which all the means used commonly on such occasions to procure relief must be employed, and we must wait till these symptoms are gone off. If the patient can make water immediately after the application, it will be proper, as it will wash away any caustic that may have been dissolved in the passage, which, if left, would irritate the parts. A little water injected into the urethra will answer the same purpose.

About the year 1752, I attended a chimney-sweeper laboring under a stricture. He was the first patient I ever had under this disease. Not finding that I gained any advantage after six months' trial with the bougie, I conceived that I might be able to destroy the stricture by escharotics;¹ and my first attempt was with red precipitate. I applied to the end of a bougie some salve, and then dipped it into red precipitate. This bougie I passed down to the stricture; but I found that it brought on considerable inflammation all along the inside of

¹ Having lately looked over some authors on this disease, I find that this is not a new idea.

[Alphonso Ferri was one of the first persons to employ escharotics. Ambrose Paré says that he had previously effected cures by cauterization, which he used to employ after trying *rupture*, *filing*, and *comminution*, when there were hard carnosities; methods, by the way, which might account for certain modern inventions. Loyseau, as is well known, cured Henry IV. by cauterization, but not without serious results, for which he was indicted.

Those who first practised cauterization, used red precipitate, orpiment, verdigris, etc., like Hunter. Latterly, M. Jobert, surgeon at Hôtel Dieu, to whom science is much indebted, has proposed dried alum, applied in the same way that Hunter used red precipitate with the chimney-sweeper of whom he speaks. In some cases, in which I have had recourse to this practice, I have found the same inconvenience with alum that Hunter did with red precipitate.—RICORD.]

the passage, which I attributed to the precipitate being rubbed off in passing the bougie. I then introduced a silver canula down to the stricture, and through this canula passed the bougie with precipitate as before. Not finding, however, that the patient made water any better, and not as yet being able to pass the smallest bougie through the stricture, I suspected that the precipitate had not sufficient powers to destroy it. I therefore took a small piece of lunar caustic, and fastened it on the end of a wire with sealing-wax, and introduced it through the canula to the stricture. After having done this three times, at two days' interval, I found that the man voided his urine more freely. Upon the application of the caustic a fourth time, my canula went through the stricture.¹ A bougie was afterwards passed for some little time, till he was perfectly well.

Having succeeded so well in this case, I was encouraged to apply my mind to the invention of some instrument better suited to the purpose than the before mentioned, which I have in some degree effected, although it is not yet perfectly adapted to all the situations of stricture in the urethra. The caustic should be prevented from hurting any other part of the canal; which is best done by introducing it through a canula to the stricture, making it protrude a little beyond the end of the canula, by which it acts only upon the stricture. The caustic should be fixed in a small port-crayon. It is necessary to have a piece of silver of the length of the canula, with a ring at one end, and a button at the other of the same diameter with the canula, forming a kind of plug, which should project beyond the end of the canula that enters the urethra, by which means it makes a rounded end; or the port-crayon may be formed with this button, at the other end. The button being introduced into the canula, it should be passed into the urethra, and when it reaches the stricture, the silver plug should be withdrawn, and the port-crayon with the caustic introduced in its place; or, if the plug and port-crayon are on the same instrument, then it is only withdrawing the plug, and introducing the port-crayon with the caustic. This plug, besides giving a smooth rounded edge to the canula, answers another good purpose, by preventing the canula from being filled with the mucus of the urethra as it passes along, which mucus would be collected in the end of it, dissolve the caustic too soon, and hinder its application to the stricture.²

If the stricture be in the bend of the urethra, the canula may be bent at the end also; but it becomes more difficult to introduce a piece of caustic through such a canula, for the plug and port-crayon must also be bent at the end, which cannot be made to pass through the straight part of the canula; but this I have in some measure obviated by having the canula made flexible, except at the end where it is to take the curve.³

After the bougie can be made to pass, the case is to be treated as a common stricture, either by dilating it slowly, or by quickly increasing the size of the bougie, and thus continuing the ulceration.

¹ Wiseman had the same idea, but probably the clumsy way in which he attempted to put it in execution might be the reason why he seems to have pursued it.

² *Vide* Plate III. Fig. 1.

³ *Vide* Plate III. Figs. 2 and 3.

There are sometimes more strictures than one; but it seldom happens that they are equally strong. One only becomes the object of our attention. The smaller ones may, however, be sufficient to hinder the passing the canula to that which is to be destroyed by the caustic. When that is the case, those small strictures are to be dilated with bougies, as in common, till they are sufficiently large to allow the canula to pass.¹

[G. G. B.—Since the time when Mr. Hunter wrote, the use of caustic in the cure of strictures has been greatly extended, chiefly through the labors of Sir E. Home, whose valuable work on strictures in the urethra and œsophagus should be consulted by all who wish to be acquainted with its various effects in detail.

The mode of applying the caustic has been greatly improved. The use of the canula has been discarded, and an *armed* bougie has been substituted in its place; that is, a small piece of nitrate of silver has been let into a common bougie, in such a manner as to present only on the surface of the extremity, and to be encircled on all sides by the plaster of which the bougie is composed. This instrument can be applied with far greater accuracy than the canula; the bougie can with ease be adapted to the curvature of the urethra, and the sides of the canal are protected from the action of the caustic. It appears that this contrivance was invented by Mr. Hunter himself, who employed it many years before his death in preference to that which he has detailed in this work.

When it is intended to apply the caustic, it is necessary in the first instance to pass down to the stricture a common bougie, of such a size as moderately to fill the passage, and composed of such soft materials as readily to receive the impression of the part against which it is pressed. By first introducing this bougie, and keeping it for the space of a minute pressed against the stricture, the surgeon obtains several advantages. The urethra is opened, and the subsequent passage of the armed bougie rendered more easy and rapid; the exact distance of the stricture from the orifice is ascertained; and such a cast is taken of the stricture as to show accurately its size and shape, and to ascertain what effect has been produced by previous applications of the caustic. This information is so necessary that without it the treatment by

¹ Added: "A. B., a soldier in the 16th regiment of light dragoons, had a stricture twenty years ago, and was in St. Thomas's Hospital; bougies were passed, and he got pretty well. About eight years afterwards the stricture began to recur, and has been growing worse ever since, and for these two years past he has not been able to do his duty, the water only coming from him in drops. In this state he applied to me. Finding the smallest bougie could not be made to pass, I desired that a full-sized one might be passed down to the stricture, and its end pressed against it, for as long a time and as often as he could bear with tolerable ease, and to continue this practice for some weeks. This he did without any advantage. Being now afraid of a total stoppage of urine without the common means of relief, and there being a sensation in the perineum threatening inflammation, I resolved to use the caustic. I applied it three times in the whole, at two days' interval; and, after the last application, he told me he had made water much more freely and less frequently than before. I introduced a bougie of the second or third size above the smallest, and it passed the stricture with great ease into the bladder. I then ordered him to pass the bougie, and increase it gradually till he could use the largest, which he did; and he is now perfectly well."—HOME.

caustic could not be pursued. The destruction of the disease is frequently partial and irregular. The armed bougie, notwithstanding every precaution, is sometimes not applied accurately on the orifice, or the caustic is dissolved in the moisture of the passage, and runs down to the lower part of the urethra, leaving the upper part almost untouched. These deviations must be accurately ascertained, in order that they may be corrected in subsequent applications.

After this previous step, the armed bougie is to be introduced, the distance of the stricture having been first marked upon it. It should be of such a size as to fill the urethra, and should be pressed against the part for the space of a quarter of a minute or more. The time should be partly regulated by the sensations of the patient. As soon as a burning pain begins to be felt, it should be withdrawn. The use of the caustic should not be repeated oftener than every third or fourth day, since that interval must be allowed for the separation of the slough.

The effects of caustic on strictures have been found in practice to be somewhat different from those which were anticipated by its first proposers. Its first and great effect is the relief of spasm. The morbid irritability of the part is exhausted by the violence of the stimulus. When the contraction is merely spasmodic, it is in most instances entirely removed by one or two applications. All difficulty of voiding the urine then disappears, and a full-sized bougie can be passed readily into the bladder. When there is a permanent stricture which is more or less affected with spasm, the spasm will be relieved as speedily, but the permanent contraction will remain. The stricture will not be removed, but its irritability will be lessened. The opening will be enlarged so as to admit a larger instrument than before, but it will not be dilated to the natural size of the urethra.

These effects are obtained by one or two applications of the caustic as perfectly as by a longer continuance of its use. The actual destruction of the stricture is a very slow process, and in old indurated strictures is scarcely attainable. The slough which is produced by the nitrate of silver is very superficial, and no material destruction can be effected without numerous repetitions of the remedy. In the mean time there is much danger of deviating from the true direction of the urethra, and the patient is subject to very serious accidents during the course.

Of these accidents, the first is retention of urine, which is a very common consequence of caustic. It arises sometimes from the violence of the irritation, but at other times it appears to be derived from the obstruction which is given by the slough, which, during the process of suppuration, hangs like a fringe from the edge of the stricture, and, where the opening is small, seems to oppose a mechanical obstacle to the flow of the urine. Hemorrhage is another effect which is of frequent occurrence, and often proceeds to a most formidable extent. This symptom, however, though very alarming to the patient, is never fatal, and as it invariably facilitates the cure, it can scarcely be considered as undesirable. Again, caustic very frequently occasions rigors, especially in those who have previously suffered from them; and it is

by no means rare that its use should be followed by the occurrence of an abscess in the perineum.

Moreover, caustic has no advantage over bougies in respect to the permanent cure of the malady. Experience has fully proved that after a stricture has been removed by caustic, bougies are still necessary, and that unless they are occasionally passed, it is almost certain to recur.

For these reasons, the treatment by caustic has of late lost much of its former celebrity. Even those advantages which in some cases it unquestionably possesses, have been insufficient to prevent it from falling more and more into disuse. Surgeons now generally prefer the treatment by bougies, which effects the same objects, sometimes, indeed, more slowly, but on the whole more certainly, and with less inconvenience and hazard.—G. G. B.]

[RICORD.—Methods of treatment which take their rise in one country have often fallen into disuse at the time they begin to make a noise in another; such is the history of cauterization. Extolled beyond measure in England after the appearance of Hunter's works, this method at the present day is almost entirely abandoned by English practitioners, as may be seen from what Babington says of it; and this, too, in spite of the efforts of Home, Charles Bell, Wathely, Macilwain, etc. Adopted in France with enthusiasm, on the recommendation and according to the seductive theory of Ducamp, who was followed by MM. Lallemand, of Montpellier, Amussat, Ségalas, Pasquier, etc., it is here on the point of losing the new favor which it acquired, if we are to believe M. Civiale, who, nevertheless, makes use of it, as some others of its antagonists do.

If it be desired to make cauterization an exclusive mode of treatment, applicable to every case without distinction, no doubt but that it is oftener injurious than useful, and that we are apparently able to do without it in very many cases; but if we employ it with discernment and prudence only where it is indicated, it becomes, if not a requisite for cure in a large number of cases, at least a powerful adjuvant to dilatation.

Thus, many spasmodic strictures yield only to superficial cauterization, employed not for the purpose of destroying the tissues, but simply to modify their vitality; thus, strictures accompanied by ulcerations, or dependent upon granulations of ulcerated surfaces, upon fungous vegetations, soft hypertrophies, or simple engorgements, get well sooner and more completely when treated by caustic alone, or combined with dilatation, than by dilatation alone. But if cauterization be employed in all cases to destroy cicatrices, which must be replaced by other cicatrices of greater extent, or if it be applied to hard, fibrous, and callous strictures, in which resolution is impossible, far from ameliorating the disease, it aggravates it and prevents a cure, which other more appropriate means might have obtained.

Hunter, as has been seen, recommends cauterization only in those cases where the stricture cannot be passed, and then to apply the caustic to the front of the stricture; whilst, since his time, and especially since Ducamp took up the subject, cauterization has been prescribed only

in case the stricture is pervious, and the caustic can be applied to its walls.

If Hunter did not think it right to recommend cauterization of strictures which can be passed by bougies, authors, on the other hand, have been wrong in rejecting it in those strictures which vain efforts by other means have proved impervious; and if the testimony of trustworthy observers did not coincide with Hunter's observations in its favor, my own experience would induce me to recommend it, doubtless in rare cases, but in preference to forced catheterization. It should be resorted to unless we have complete retention of urine, which has already lasted some time, and which requires prompt evacuation; in such a case, catheterization having become imperative, it might be rendered more difficult and less sure by the previous use of caustic.

In the more numerous cases in which cauterization should be applied to the interior of the stricture, it is better to wait for some degree of dilatation before using it. For, though it commonly quiets spasm; though, to a certain degree, it has a resolvent effect; though, as I have elsewhere said, nitrate of silver possesses a kind of antiphlogistic power over mucous membranes, it is none the less true that, in some cases, cauterization is followed by inflammation and swelling; that hemorrhages are produced by it; that secretions of greater or less consistency may follow it, and cause, like the eschars which it produces, obliteration of the passage; and that these symptoms are the more serious the greater obstacle to the passage of instruments the stricture presents.

We may, it seems to me, direct the use of cauterization as follows:—

1. Cauterize from before backwards, whenever the stricture still permits the passage of the urine, but resists the introduction of every instrument properly employed for a sufficient time.

2. Cauterize the interior of the stricture when dilatation is without effect, or is too slow, or when the stricture remains stationary after having yielded to a certain degree, and inflammatory action and the loss of a part of the benefit obtained result from our farther efforts.

Cauterization from before backwards may be performed according to Hunter's, Home's, or Wathely's method; but in those cases in which I have had occasion to use it, I have employed a canula, inclosing a stylet with a curette at its extremity, instead of on the side, as in the methods copied from Ducamp.

In one patient at the hospital, with a circular stricture situated in front of the bulb, into which, for more than a month, the smallest sized bougie could but just enter, without passing it, a single cauterization was sufficient to allow the introduction of larger sized bougies, which afterwards completed the cure. In this case, the instrument which I had prepared by M. Charrière, consisted of a fine bougie, designed to become engaged in the stricture; a hollow tube inclosing this bougie, and bearing at its extremity a circular groove armed with nitrate of silver; and finally a canula conductor.

In this method, as in Hunter's, the canula conductor is first introduced as far as the stricture, armed with a bougie which fills it exactly, so as to prevent any mucus entering from the urethra; the canula is

then withdrawn, so as to uncover the porte-caustique, and the fine bougie, of which I have spoken.

However, we oftener have recourse to cauterization from within outwards, that is, on the inside of the stricture. This method of cauterization, perfected by M. Arnott's researches, is performed in different ways and with different instruments.

In Ducamp's method, we first ascertain the depth of the stricture and its form, by means of the porte-empreinte, and measure its length; we then introduce the instrument, to which this surgeon gave the name of porte-caustique, and which consists of a graduated flexible canula, about eight inches long, and armed at one extremity with a platinum socket, which is traversed by a small cylinder of the same metal. The cylinder, one line in diameter, and ten lines long, is attached to a rod, which is longer than the canula which incloses it, and is hollowed out on one of its sides into a groove or curette, three lines in length and three-fourths of a line in width. Powdered nitrate of silver is placed in this groove, and melted by means of a blowpipe, or the flame of a candle, taking care not to heat it so much as to decompose the salt. As soon as it is armed with nitrate of silver, the grooved cylinder is drawn within the canula by means of the rod to which it is attached. Then the canula, smeared with any fatty substance, is introduced as far as the stricture, and being held in place, the rod which bears the cylinder is pushed forwards, so that the latter, escaping from its socket, may enter within the stricture. If the stricture is circular, the instrument is completely rotated; otherwise the groove is directed to the side of the urethra to which the stricture is confined. The caustic is held in place a moment; the quantity employed is a tenth of a grain, and its application is repeated about every three days, until a No. 6 bougie can be introduced, when dilatation finishes the cure.

By this method it often happens that the nitrate of silver is melted before entering the stricture, whatever care be taken to make the nitrate-bearing cylinder fit its sheath, by means of a straight or curved canula, with a central or eccentric opening, according to the case; whence it follows, that Ducamp, who censured cauterization from before backwards by Hunter's method, really did the very same thing himself.

To avoid the defect in this method, the ingenious Professor at Montpellier, M. Lallemand, proposed to replace the flexible canula of Ducamp's instrument, by a straight metallic canula in the straight portion of the urethra, and a curved canula in the curved portion of the canal. This canula incloses the nitrate-bearing curette, attached to a simple metallic rod in the straight instrument, but spirally twisted in the curved instrument, so as to allow of rotatory motion. In this method, the instrument is not designed to stop before the stricture, but to be introduced within it, before uncovering the nitrate of silver; for it is only when we are within the constricted part, that we withdraw the canula and expose the curette, directing it toward the affected part, or the whole circumference, according to the case. M. Lallemand's porte-caustiques are graduated, or furnished with a slide, which can be screwed to any point, to indicate the depth to which they should be

introduced; and they are of different sizes, from No. 1 to No. 6, so as to fit different sized strictures. But it has been justly said, that by this method the curette sometimes projects before or behind the stricture when the canula is withdrawn, and thus the caustic is no longer exactly and exclusively applied to the affected part.

M. Amussat, fearing the inconvenience which I have mentioned, altered M. Lallemand's instrument, and made the orifice of the canula eccentric, at the same time placing at the extremity of the grooved cylinder a little knob, also eccentric, and designed to complete the end of the instrument when suitably adjusted in the canula, but which was made to project by giving it a semicircular motion. With this instrument we pass the stricture, then push forward the knob, and, slightly withdrawing it again, endeavor to hook it on to the posterior edge of the stricture. As soon as it has caught, the canula is withdrawn, and the curette exposed, which we apply to any part of the circumference we wish to cauterize.

Yet, however exact and seductive M. Amussat's theory is, to whom science owes so many clever things, it is clear to all persons of experience that cauterization with his instrument is no more accurate than by other methods. In Ducamp's method you have the advantage of determining the anterior edge of the stricture; in M. Lallemand's, you traverse it with the caustic under cover; two requisites for precision and safety, which appeared so important to M. Ségalas that he endeavored to unite the two in his instrument, one of which is wanting in the *porte-caustique* of M. Amussat. It has also seemed to me that, since each method has an undoubted advantage, we may, by perfecting M. Ségalas's instrument, unite them all in one. Thus, the instrument which I have had prepared, and which is figured in Plate 3, has the advantage of stopping in front of the stricture, and of allowing us to pass to the other side of it without uncovering the curette; and as soon as the eccentric knob has grasped the posterior border, and the curette is uncovered, we are sure of touching only the affected part. In order to avoid a final inconvenience, viz.: the danger of the curette becoming detached and remaining in the urethra, or falling into the bladder, we may adopt M. Dubouchet's system, by which the armed curette, instead of projecting from the canula, turns within it, and is uncovered by means of a window on its surface. Or, by making the curette, the spiral, and the rod, out of a single piece of platinum, we have nothing more to fear.

However, in the majority of cases, when I have recourse to superficial cauterization, employed less as a means of destruction of the tissues than as a resolvent adapted to modify their state—results which Ducamp obtained, considering the very small quantity of nitrate of silver which he used—I employ M. Lallemand's instruments, which are more simple and more easily managed; and I do not fear to encroach a little on the sound parts. It is well known that M. Civiale, who, by the way, is little in favor of cauterization, in order to attain still greater simplicity, prefers to use wax bougies, which, being first introduced within the stricture, take an impression of it, and then being armed

with nitrate of silver in the depressed portion, are placed again in contact with the diseased parts.

To finish the subject of cauterization, which has been modified in so many ways since Hunter's time, I would remark that its antagonists would probably have the field to themselves if we practised the method recently proposed by Dr. Berton, which consists in attacking strictures with the actual cautery, by means of a platinum sponge, inclosed in an instrument similar to Hunter's or Ducamp's, according as it is desired to cauterize from before backwards, or from within outwards. The sponge is heated by a current of hydrogen gas, according to Dœbereiner's method.

But, it must be confessed, that some strictures will not yield to dilatation, and are aggravated by caustic. Such are, in a large number of cases, those which depend on cicatrices, bands, callosities, inodular indurations, and fibrous degenerations. Here, however, art still offers to true practitioners resources which all speculative theories cannot gainsay. For these refractory strictures, we may, though difficulties still confessedly remain, oppose the action of cutting instruments, of which Hunter does not speak, though they were employed before his time.

Puncture, Superficial and Deep Scarifications and Incisions.—As in cauterization, it has been proposed to apply these means to the anterior portion of strictures which cannot be passed, and are therefore to be incised; or else, in cases of stricture, whose interior can be reached, to make mere scarifications of greater or less depth, so as to produce disorgement and resolution; or, again, to divide certain strictures through their whole thickness by free incisions. Puncture of a stricture from before backwards is, doubtless, a difficult thing to do, and often dangerous, and we are yet far from being able to execute it with precision in the incomplete state of our knowledge, and with the imperfect instruments which we possess, in spite of the ingenious labors of M. Reybard. But more difficult problems have found a solution, and we must not despair of finding one for this. If, as pathological anatomy seems to authorize us to conclude from some cases, we have less to fear from false routes *under extreme circumstances* than was formerly supposed; and if, when the alternative presents itself of puncturing the bladder, or of running the risk of a false route, it is, perhaps, preferable to endeavor to reach the reservoir of urine by the nearest way to the natural one, it is still better to attempt an accurate division of the constricted part, as I have often done with success, by means of my urethrotome. This instrument consists of a conical canula, either straight or curved, according to the region affected, which incloses a blade that is made to project at its extremity, in proportion as the canula advances within the stricture, so as gradually to cut a passage for the rest of the instrument.

However, as in cauterization, a cutting instrument should generally be employed only when the stricture can be passed and attacked from within outwards. Let it not be said that, as soon as a stricture will admit bougies, there is no need of other treatment; for though this is

the general rule, there are numerous exceptions, as honest and unprejudiced practitioners will admit.

When we have recourse to cutting instruments, the scarifications should be made the more superficial the larger the opening in the stricture is; and free incisions should be made only when there exist very extensive bands, or strictures of great thickness.

In place of the instruments proposed by MM. Amussat, Ségalas, Leroy d'Etiolles, Tanchou, Guillon, Reybard, Mercier, etc., I have substituted one, by means of which simple scarifications or incisions of various depths can be made. This instrument, which is simpler than all others, more easily managed, and more conveniently cleaned, is figured in Plate 3.

Yet, whether we practise superficial or deep scarifications, or make free incisions, for which M. Civiale's urethrotome may be used at the meatus urinarius, or in the substance of the glans, the cure must be completed by bougies or sounds.

Excision.—With regard to vegetations, fungosities and excrescences, for which excision was proposed some time ago, the plan lately suggested by M. Leroy d'Etiolles deserves a different appreciation from that given it by a recent writer. This surgeon's system met with considerable favor from the Academy of Sciences, and it appears to me sounder than the system of those persons who have lately proposed files to *file away* strictures.

Ruptures.—It has also been proposed to burst strictures by mechanical dilatation pushed to the rupture of the constricted part, in a similar way to that recommended by Prof. Recamier in the treatment of anal fissures. M. Perrève has made some investigations on this subject, which deserve serious attention.¹ Yet Prof. Rigaud's (of Strasbourg) metallic dilatator, with parallel rods, would seem calculated to give more satisfactory results.

Forced Injections.—With regard to forced injections, which they have endeavored to revive, even if the theory on which their recommendation is founded were true, and the presence of a mere plug of concrete mucus or coagulated blood often increased the obstruction, they would still be of but feeble assistance.

Incisions from without.—Mr. James Syme, of Edinburgh, in a tract published in 1849, proposed to incise strictures from without. The following is his method:—

If the patient fear the pain, chloroform is given. He is afterwards placed on the edge of a bed, and his lower extremities held apart by assistants, as in lithotomy. A straight or curved grooved sound, according to the region affected, is introduced within the stricture, and should pass through it. The surgeon, seated, or resting on one knee, makes an incision in the median line of the perineum, or penis, wherever the stricture is situated. This incision should be an inch or an inch and a half in length, and should divide the skin and the subjacent tissues external to the urethra. Then the operator, holding the grooved sound in his left hand, and a straight, narrow-bladed bistoury

¹ Treatise on Organic Strictures of the Urethra. Paris, 1847.

in his right, feels, with his index finger guarding the point of the bistoury, for the groove of the conductor; and as soon as he finds it, he plunges the point of the bistoury back of the stricture, that is, on the vesical side. Having done this, he draws the bistoury from behind forwards, so as to divide the whole length and thickness of the constricted portion of the canal; after which he withdraws the director. Finally, a silver catheter, No. 7 or 8, is passed into the bladder, and left in forty-eight hours. The catheter is then removed, and no farther care taken of the incision, through which the urine flows for a few hours, or a few days at most. At the end of eight or ten days, a middle-sized bougie is introduced, and repeated every week or fortnight for two months. But if subsequently there should be any great tendency to contraction of the tissues, it would be prudent to pass the bougie four or five times in the course of a year.

In support of this method, which he considers preferable to all others, Mr. Syme quotes eleven successful cases, which, indeed, appear very encouraging.

Puncture of the Bladder.—In impervious strictures, or when we have no time to try to pass a catheter on account of the danger threatened by prolonged retention of urine, we must not hesitate, so long as they used to do, before puncturing the bladder above the pubes. The bladder, being evacuated, renders cauterization easier, or at least allows us to employ those means which require time.—RICORD.]

CHAPTER III.

OF STRICTURES IN WOMEN.

OBSTRUCTIONS to the urine in women, I believe, generally arise from stricture, although not always; for I have known them produced by compression from some adjacent swelling, and they are common in utero-gestation, as also in dropsical or scirrhus ovaria. But such causes are commonly known long before this effect is produced by which the suppression is easily accounted for. It may also arise from excrescences, as in men.

How far a stricture in the urethra of this sex is really a consequence of a venereal inflammation I am not certain; but I should suppose it is not, and for stronger reasons still than those which I gave in speaking of the cause of strictures in men; for I can say that none of the strictures that I have seen in women have arisen in consequence of this disease, at least I had no reason to believe that they did; and I have observed before that in most women who have the venereal disease in the form of a gonorrhœa, it seldom attacks the urethra. Therefore, if we find a stricture in a woman who has had the disease, we are not to impute it to that, at least till we can ascertain the urethra was affected; and even then it will remain doubtful.

Strictures are not near so common in women as in men. This may be owing to the great difference in the length of the two canals; but more especially to the canal in women being more simple, and intended only for one purpose. The stricture in women does not produce such a variety of symptoms, or so much mischief, as in men, there not being so many parts to be affected.

[RICORD.—Strictures of the urethra are perhaps less rare in women than is supposed. The reason that they have been thought to be less frequent is, that they do not so soon, nor so often, excite appreciable symptoms in women as in men, and that they are rarely noticed, until they have caused considerable dysuria, or complete retention.

As to gonorrhœa, which is the most common cause of stricture in women as in men, it is well known that it affects the urethra in women more frequently than Hunter seems to think.]

§ 1. *Of the Cure of Strictures in Women.*

The cure of strictures in the urethra of women is similar to that in men; but it is rather more simple, from the simplicity of the parts. There is, however, an inconvenience attending the passing the bougie in women that does not occur in men, which is, that in most cases it must be passed for them, it being hardly possible for a woman to introduce a bougie herself. The confinement of the bougie is also more difficult; for although it can easily be prevented from going into the bladder by bending the outer end down upon the mouth of the vagina, yet it is very difficult to prevent it from slipping out. It will be necessary to have a bandage of the T kind passing down between the labia over the bend of the bougie.

It appears to me that the caustic would answer extremely well in such cases; and therefore I should prefer it to the bougie, both for convenience and efficacy.

[RICORD.—Superficial and deep scarifications, and incision of strictures, are of easy application in women, and free from most of the dangers which are to be feared in men.]

§ 2. *Of the Gleet in consequence of Stricture.*

I have already observed that it generally happens, if not always, that there is a gleet when there is a stricture in the urethra. This I suppose to arise from the irritation produced in the urethra beyond the stricture, by the urine in its passage distending this part too much, which distension is increased by the increased strength of the bladder. This symptom often leads us to the knowledge of a stricture, or at least gives a suspicion of such disease; and when a stricture is known to be the cause, no attempts should be made to cure the gleet, for it is generally cured when the stricture is removed; but if it still remains, it may be cured in the manner recommended in common gleet, as probably arising from a cause different from stricture.

CHAPTER IV.

OF STRICTURE ATTENDED WITH SPASMODIC AFFECTION.

THERE are very few strictures that are not more or less attended with spasms; but some much more than others, the spasm being in some cases more the disease than the stricture itself. But real strictures are attended with occasional contractions, which make the passing of the urine much more difficult at one time than another. In all the cases that I have seen of this kind, when not attended with spasms, the disease is not formidable; but, when the parts are in a spasmodic state, the symptoms are as violent as in the simple stricture.

As this is a mixed case, it has all the characters both of the permanent and spasmodic stricture; for the urethra in such circumstances is in a state similar to what it is in the true spasmodic kind, being very irritable, giving great pain in the passing of the bougie, and often rejecting it altogether, as will be taken notice of when we shall treat of that disease.

Upon considering this subject, we should at first hardly be disposed to believe that the spasm in the urethra is in the strictured part, which can scarcely be supposed capable of contraction; and it might therefore naturally be referred to the sound part of the urethra, as being brought on by the waters not flowing freely. If this is a just mode of accounting for it, we must suppose that the contraction is behind the stricture, that being the only part dilated by the water; and such urethras being very irritable, that part may contract so as to stop the flowing of the water altogether. But some circumstances that occur in practice give reason to believe that such strictures have the power of contraction; for we find the bougie grasped by the stricture when allowed to remain some time, and the circumstance of the strictured parts refusing the bougie at times is also a proof of the same.

There is sometimes this singular circumstance attending these cases, that when there arises a gonorrhoea, or any other discharge of matter from the urethra, or an increase of an old gleet, the passage becomes free, and allows the urine to pass as usual; but such relief is uncertain and only temporary; for whenever the discharge ceases the spasmodic affection returns. I think it is probable that it is only the spasm that is affected by the discharge, and not the real stricture. Two remarkable cases of this kind fell under my observation, which I shall now relate.

A gentleman had for a long time a complaint in the urethra, attended with a stricture, which was supposed to be originally from a venereal complaint. It was often attended with a discharge, which always produced a slight fever on its coming on; but while the discharge lasted

the difficulty of making water was relieved, and that in proportion to the greatness of the discharge; and whenever he got a fresh gonorrhœa the same thing happened.

Another gentleman had a difficulty in making water, supposed to arise from a stricture. It was generally attended with such a running as is common to strictures; but when that discharge was much increased then the stricture was less in proportion. During this complaint he contracted two different infections, both of which relieved him of the stricture for the time.

As this is a mixed disease, it may be thought proper to treat it with a bougie for the real stricture, and for the other to use the method to be recommended hereafter for the cure of spasm.

It sometimes happens in these mixed kinds that a bougie does not immediately pass, but is rejected by the spasm; but by letting it lie in the urethra, almost close to the stricture, for ten, fifteen, or twenty minutes, you will often make it pass. This is, as it were, stealing upon it, and the water will often flow, although the bougie is not attempted to be passed on. It is often relieved by gently irritating injections.¹

CHAPTER V.

OF SOME CIRCUMSTANCES ATTENDING THE USE OF BOUGIES; THEIR FIGURE AND COMPOSITION.

IN cases of strictures, where a bougie is used as a wedge, not as a stimulant, and where a stricture is so far overcome as to let a bougie pass on, the question is whether it may be better to pass the bougie through the whole length of the urethra, so that the end of it shall be in the bladder, or only to pass it through the stricture a little way, so that its end shall remain in the urethra. Nothing but experience can determine this question; and, perhaps, in such cases we seldom make a fair trial, generally pushing the bougie on to the bladder; though if we observe the consequences of bougies not passing in those cases where they either cannot pass far beyond the stricture or not at all, we find no inconvenience arising from this circumstance, except when they are applied with too much force, so as to make a new passage. The common idea is that it will be more hurtful to allow the end of the bougie to lie in the urethra than in the bladder; but this seems to be more founded in theory than practice.

Some people have such a quantity of calculous matter in their urine, or so great a disposition in their urine to deposit its calculous matter, that it only requires the presence of an extraneous body in the bladder

¹ Added: "A gonorrhœa or occasional gleet relieves the spasmodic state of a stricture upon the same principle as the passing a bougie a few inches down the urethra; the irritation near the glans penis takes off the spasm upon another part of the canal."

to become an immediate cause of stone; for I have observed in some that the end of a bougie cannot remain in the bladder a few hours without being covered with a crust of calculous matter. Such people I have generally advised to use as much exercise as all other circumstances will allow.

Bougies, when first introduced, often produce sickness, and sometimes even fainting. I have seen a patient become sick, the color leave his face, a cold sweat come on, and at last a deliquium; but all these effects soon go off, and seldom return upon a second or third trial. They at first produce an irritation on the urethra, which gives pain in the time of making water, but goes off on repetition. They produce a secretion of pus in those cases where there was none, and generally increase the discharge where there is one previous to the application of them; but this effect gradually ceases.

It frequently happens that swellings in the lymphatic glands of the groin arise from the use of bougies, but I never saw them advance to suppuration. As in most of such cases there is a discharge of matter previous to the bougie being passed, they can hardly be owing to the absorption of matter, but must arise from sympathy.

When treating of the stricture, I observed that it was often the cause of a swelling in one or both testicles; and farther, that the passing of a bougie often removed that complaint. I may now observe that a very common consequence of the passing a bougie is a swelling of the testicle. This also arises from sympathy, and, like the swelling of the glands, is a common effect of all irritations of the urethra.¹

¹ Added: "In a gentleman who had had a stricture for many years, which at times is attended with a great deal of spasm, but has never any irritation in the testicles, upon my passing a bougie smeared with a stimulating oil, for a few minutes, to remove the spasm, an irritation and swelling of the left testicle came on. He afterwards caught a gonorrhœa, which entirely removed the spasm while it lasted, but also brought on a swelling of the testicle."—HOME.

[RICORD.—These are far from being all the inconveniences which result from the presence of sounds or bougies in the bladder. As direct effects of their presence, we often observe inflammation of the neck of the bladder, which excites frequent and urgent desire to urinate; vesical tenesmus, and incontinence of urine, varying in degree and duration. These effects commonly depend on excessive irritability of the organ, or may be the consequence of a kind of fatigue and relaxation of the muscular fibres of the neck of the bladder. Various degrees of inflammation of the bladder itself are not very uncommon after the use of instruments, which have remained for some time in the cavity of this viscus. Ulcerations and perforations are observed in those cases in which the sound or bougie always rests on the same point. The repeated introduction of bougies or sounds, and especially their prolonged retention in the urethra, often gives rise to inflammation and abscesses of the prostate. These instruments frequently inflame even the ejaculatory ducts, and may become a temporary or permanent cause of spermatorrhœa; they may also determine inflammation of the vesiculæ seminales and of the epididymis. Finally, the pressure exercised by bougies and sounds on certain points of the urethra, may cause still farther complications, as M. Mercier has shown. These are the more formidable, the more voluminous, stiffer, and less adapted to the natural curves of the urethra, the instruments are. Permanent catheters produce their most injurious effects at a point corresponding to the suspensory ligament of the penis, in consequence of the pressure exercised on the inferior wall of the canal. These effects consist of inflammation, suppuration, abscesses, ulcerations, gangrene, loss of substance, and perforation of the urethra; whence result infiltration of urine and urinary fistulæ. The loss of substance which the canal undergoes in these cases, is of an elongated form, stretching backwards, when it has been caused

It may not be improper here to add some observations on the figure and composition of bougies. They ought to be about two inches longer than the distance between the glans and the stricture, or more if they can pass freely, so as always to allow an inch to bend upon the glans, and another to pass beyond the stricture. The thickness should be according to the size of the stricture; at first, such as will pass with a small degree of tightness, and this should be gradually increased as the contracted part enlarges. But when the urethra has become of the natural size, the bougie need not be farther increased, but its use still continued, as has been observed.

With regard to the shape, they should not taper from end to end when very small, but should be nearly of an equal thickness till within an inch of their smallest end, after which they should taper to a point, forming a round wedge fitted to pass into the stricture; and this form gives them greater strength than when made to taper from one end to the other.

The consistence ought to vary according to the nature of the case and size of the bougie. If the stricture be near the glans, a stiff bougie may be used, and the whole may be made to taper gradually, because a short bougie will always have sufficient strength for any pressure that is necessary; but if the stricture be more deeply seated, as about the bulb, where the passage begins to take a curve, the bougie must be a little thicker in its body to support the necessary pressure. If the stricture be anywhere in the bend of the urethra, or near the bladder, the bougie should be very flexible (though this is contrary to our general position), because in this case it must bend in order to adapt itself to the curve of the passage, which it ought to do with ease; for when it bends with difficulty it does not make its pressure upon the stricture, but upon the back part of the urethra, and therefore does not enter so easily, which circumstance makes it more difficult to enter a stricture near the bladder than near the glans. In the composition of the bougie the consistence is the most material thing to be considered, the medical properties, so far as known, being of little consequence. The materials of which they are commonly made are wax, oil, and litharge. The litharge gives them smoothness, and takes

by a metallic sound, and forwards, in front of the suspensory ligament, when it is produced by a flexible bougie.

In this region, sounds may sometimes be the cause of strictures following the bad effects which they produce, or they may keep up fistulous passages, when we persist in trying to make them cure them. Beneath the symphysis pubis, the ulcerations and inflammation which they produce are less formidable. Finally, on the inferior wall of the membranous and prostatic portions of the urethra, these instruments produce the same effects, but commonly without any inconvenience resulting from them. M. Mercier has shown that in cases of engorgement of the transverse portion of the prostate with valvular elevation of the posterior border of the neck of the bladder, the pressure of an instrument depresses the affected parts and hollows out a furrow, or destroys them by ulceration, which in this case is very beneficial, and may be requisite for a cure.

But besides these direct effects, we also meet with sympathetic phenomena, either nervous or of a true febrile character; among the latter, the most common are attacks of intermittent fever, either quotidian or tertian, but rarely of any other type, which recur or cease, according as we continue the instrument in the bladder or withdraw it.

—RICORD.]

off the adhesive quality which they would have if made of wax and oil only. A composition which answers well is three pints of oil of olives, one pound of beeswax, and a pound and a half of red lead, boiled together upon a slow fire for six hours.

[RICORD.—Since Hunter's time, practitioners have been far from agreeing on the requisite form for bougies.

Conical bougies have the inconvenience of dilating the sound parts of the canal more than the diseased parts, and, if large enough, of fatiguing the meatus. Again, when they are inflexible, or very rigid, they expose the patient to the danger of false passages more than any other instruments. But when we have a stricture of some size, for which a small instrument is necessary, very pliable conical bougies are undoubtedly to be preferred even to Ducamp's conductors, or to the ingenious method recently proposed by Béniqué, which consists in introducing into the urethra a bundle of small independent bougies, which are pushed upon successively until the one corresponding to the opening in the stricture is introduced.

The bougies which I employ, the cone of which does not begin till near the extremity designed to pass the stricture, have the necessary solidity, and are so readily introduced, that I often pass them with ease, where cylindrical instruments of a much less caliber are stopped. They give to the anterior portion of strictures the form of a tunnel, into which they are introduced without violence, by pressure which is gradually increased, and which is infinitely less painful and dangerous than that of cylindrical bougies of an equal diameter. Moreover, if my personal experience in a large hospital had not taught me all the advantages that may be derived from bougies of this shape, Dupuytren's opinion would suffice to lead me to recommend them, in spite of those theorists who would have us believe that they are generally abandoned at the present day.

As I said before, both conical and cylindrical bougies, when they reach a certain size, necessarily fatigue the sound parts of the canal, and especially the meatus urinarius, and the portion of the urethra included within the glans, or immediately back of it. To obviate this inconvenience, fusiform or bellied bougies have been proposed, and they are very properly recommended by Ducamp. They undoubtedly have the advantage of dilating only the constricted part. The principal objection that has been made to them, viz.: that their introduction is difficult, and attended with violence to the meatus and the sound parts of the canal in front of the stricture, is not tenable; for, since the utmost volume of their enlarged portion does not exceed the diameter of such cylindrical bougies as would be used in the same case, it is seen at once that those parts of the canal which we desire to spare, will receive less injury from the momentary passage of this enlarged portion than from the permanent dilatation exercised by cylindrical bougies.

Conical bougies terminated by a small bulb, or olive-shaped end, are very useful, and I must confess that at first I did not fully appreciate them. I now use them more than any others. They can be made to pass strictures which are impervious to other instruments. In

most cases they have the advantages of conical bougies, without the inconvenience of their point.

M. Leroy d'Etiolles has derived great advantage from twisted bougies, or bougies rolled into a spiral, in certain eccentric strictures. They are made by rolling small bougies of India rubber or gutta percha round a large knitting-needle, or any other cylindrical body. With time, patience, and a light touch, strictures may be overcome by these instruments, which at first appear insurmountable. When you have succeeded in passing one of these bougies, and the urine flows between it and the canal, it must be left in place twenty-four hours, when it can be easily replaced by a larger one.

Flexible bougies are in common use, and many surgeons prefer bougies of wax; but though these have the advantage, when properly made, of taking an impression of the diseased parts, and of moulding themselves to the natural or accidental curves of the canal, it often happens, when we wish to introduce them, that they are either too stiff for some patients, or that they become too flexible, after we have been trying to pass a stricture long enough for them to soften.

Bougies of gutta percha have recently been proposed. These bougies, which are at first stiff, but which become flexible when slightly warmed, are not affected by contact with the urine, and may become valuable instruments at a future day, when they are farther perfected.

For myself, I prefer the so-called gum-elastic bougies. But stiff bougies are still frequently employed; and lately, the use of metallic sounds has very properly been revived. I am well aware, as Desault remarks, that their feeble weight adds nothing to ordinary dilatation made with softer instruments, which are more easily borne; but I would beware of stigmatizing with empiricism, as some persons have done, those who have recommended them as a simple and economical means for the poor and for hospitals, where many patients use them with great ease and without danger. They are especially adapted to cases where it is only requisite to maintain a cure.

Stiff bougies have also been recommended, but they are not absolutely or permanently stiff; such are the whalebone bougies, that M. Lallemand (of Montpellier), recommends, catgut bougies, and the more recent bougies of flexible ivory. The latter, composed of ivory, reduced to a semi-gelatinous state by depriving it of a portion of its phosphate of lime, have the advantage of producing a solid instrument to which a suitable curve is given, according to the case, and which, under the influence of the moisture of the urethra, afterwards softens and swells, adapting itself to the shape of the canal, and tending to dilate it more and more. The faults found with whalebone bougies, and especially with those of catgut, may also be found with these. Their chief inconvenience is owing to the fact that the instrument swells in the constricted part, so as to become fixed, and adheres with so much force that it cannot be withdrawn without considerable violence, which is not always free from danger. However, we may obviate this defect by soaking the instrument in water, and ascertaining beforehand the extreme dilatation of which it is susceptible; and thus we may derive

great advantage from this German invention, which has been so happily naturalized in France by M. Charrierc.—RICORD.]

§ 1. *Of a New Passage formed by Bougies.*

The greatest evil arising from the improper use of the bougie, and the most dangerous, is where it makes a new passage.¹ I mentioned before, that this generally rose from an attempt to produce ulceration by the application of the end of the bougie to the stricture in cases where a bougie could not pass; for, in those cases where a bougie passes, there can be no danger of such an effect.

This new passage is seldom carried so far as to produce either an increase of the present disease or a new one, although sometimes this happens; yet it prevents the cure of the original disease; for it renders both the application of the bougie and caustic to the stricture so uncertain that a continuance of either is dangerous, as it may increase the mischief, and at last produce very bad consequences.

This new passage is generally along the side of the old one when in that part of the urethra which is on this side of the bend, and it is made in the spongy substance of the urethra; but when it is made at the beginning of the bend, it passes on in a straight line through the body of the urethra, about the beginning of the membranous part, and goes through the cellular substance of the perineum towards the rectum. When the new passage is made between the glans and the bend of the urethra, it may take place on either side of the canal equally in the spongy substance of the urethra; between the canal and the skin of the penis or scrotum; and it may be between the canal and the body of the penis. The situation of it will make some difference in the operation necessary for the cure of this complaint.

When a new passage is made, I know of no other method of cure than to open the part externally; and the opening must be made in that part of the urethra which is most convenient for coming at the stricture, regard being had to the other external parts, such as the scrotum. If the stricture be before the scrotum, the new passage will be there also, and, therefore, the operation must be made of course before that part; but if the stricture is opposite to the scrotum, the bottom of the new passage may also be opposite to this part; but if the new passage is of a considerable length, its bottom or termination may be in the beginning of the perineum; and in either situation, the operation must be begun behind the scrotum, or, indeed, may be made a little way into it. But if the stricture and new passage are in the perineum, then the operation is to be performed there.

The method of performing this operation is as follows: Pass a staff, or any such instrument, into the urethra as far as it will go, which will probably be to the bottom of the new passage, and that we may be certain is beyond the stricture. Feel for the end of the instrument externally, and cut upon it, making the wound about an inch long if the disease be before the scrotum, and an inch and a half, or more, if

¹ *Vide* Plate II.

in the perineum. If the new passage be between the urethra and the body of the penis, then you will most probably get into the sound urethra before you come to the instrument or new passage; if so, it is necessary to go farther in order to get into the bladder, as we may be certain that this part of the urethra is behind the stricture. Having proceeded so far, take a probe, or some such instrument, and introduce it into the urethra by the wound, and pass it towards the glans, which will be passing it forwards towards the stricture. If it meet with an obstruction there, we may be certain it is the stricture, which is now to be got through, and which will afterwards be easily enlarged. To complete the operation, withdraw the probe, and introduce in the room of it a hollow canula forwards to the stricture; then take another canula, and introduce it from the glans downwards till the two canulas oppose each other, having the stricture between them, an assistant laying hold of the urethra on the outside, between the finger and thumb, just where the two canulas meet, to keep them in their places; then through the upper canula introduce a piercer, which will go through the stricture, and pass into the lower canula; this done, withdraw the piercer, and introduce a bougie into the same canula in the same way, being careful that it passes into the lower canula; then withdraw the lower canula, and the end of the bougie will appear in the wound; lay hold of the bougie there, and withdraw the upper canula over the bougie, leaving the bougie in the urethra; now the lower end of the bougie is to be directed into the urethra leading on to the bladder, and pushed on to that viscus. It may be farther necessary to lay the whole of the new passage open, that it may all heal up; for it is possible that this new passage may often receive the bougie, to be applied in future, which would be troublesome, and might prove an obstruction to the cure.

If the new passage be between the skin and the canal of the urethra, after cutting down to the instrument, you must go farther on in search of the natural canal, and, when you have found it, introduce a probe into it towards the glans, to find the stricture; and when this is done, go on with the operation as above described.

The bougie must be left in the passage, and as it may be found difficult afterwards to introduce another readily into the bladder, the longer the first is allowed to remain, so much the more readily will the second pass. I am not certain but that it would be better to push on the hollow canula at first, and keep it there for some days, at least till the inflammation is over, and the parts have adapted themselves to that body, which will make a bougie pass more easily afterwards. The bougies must be gradually increased in size, and continued till the wound is healed up.

The first case of a new passage formed by a bougie which I ever saw was at the hospital of the third regiment of guards, about the year 1765. A young soldier had a stricture, for the cure of which he had bougies regularly passed for near half a year without any relief. The bougie had gone farther than at first by two inches, and therefore seemed to have gained ground on the stricture. This seemed to justify the continuance of the practice; but it being suspected that there was

something more than was then understood, I was consulted; and, without foreseeing what was really the case, I proposed that an opening should be made into the urethra where the obstruction was, and carried farther back if necessary, in search of the sound urethra. This was accordingly done in the following manner: the grooved staff was first passed as far down as it could go, which was to the bottom of the new passage; the scrotum was pulled up upon the penis, when the end of the staff was prominent towards the skin a little way above the perineum, and there an incision was made on the end of the staff about half an inch long; this disengaged the end of the staff, which was pushed out at the wound; then search was made for the other orifice which led to the bladder, on the supposition that that orifice was the stricture; but none being found, we tried to trace it by blowing with a blowpipe into the bottom and lower part of the wound; but no orifice could be observed. We then began to suspect that we were not in the urethra. To determine if we had been in the urethra, I began to dissect with care the parts at the bottom of the wound, and laid bare the muscoli acceleratores. I then made an incision into the body of the urethra and came to the true canal, which was easily discovered. When this was done we passed a probe on to the bladder, then withdrew, turned, and passed it from this wound towards the glans penis, but found that it went not much more than two inches that way, and then stopped. This struck us with a new idea of the case, for we were now sure that the end of the staff had not been in the urethra, but in a new passage made in the spongy part of the urethra, for two inches beyond the stricture. We now passed a staff from the glans down the urethra, and another up from the last wound, to see at what distance the ends of the two instruments were, which would give us the length of the stricture. We found, by taking hold of the urethra between the finger and thumb on the outside, that the two ends were close together. What was to be done next was our consideration; it immediately struck us that we might force our way through the stricture with safety. The gentleman who assisted me in the operation passed a blowpipe one-fifth of an inch in diameter (being not sufficiently furnished with instruments) from the wound forwards to the stricture; and then I took a silver canula, open at both ends, which had an iron piercer longer than itself, and passed it down to the stricture from the glans; and now the end of the canula opposed the end of the blowpipe, and they were almost close upon one another. They were kept in this position, with the finger and thumb applied on the outside of the penis, like splints on a broken bone. I then introduced the piercer and pushed it on, which went through the stricture into the hollow of the blowpipe. Great care was taken not to push too forcibly, lest the two ends of the hollow tubes should slip by one another, which they would do if not held firmly, as actually happened twice in this case; but we succeeded the third time. I then pushed on the canula through the stricture, and with it pushed out the blowpipe. The next object was to pass a hollow bougie along the urethra to the bladder, to do which the small end of it was introduced into the canula, which, being pushed on, forced out the canula at the wound; we then passed a

director into the other orifice of the urethra, leading on to the bladder, and put the end of the bougie into the groove of the director, and pushed it along the groove to the bladder; and before we withdrew the director we turned it round with its back to the bougie, that the end of the bougie might not stop against the end of the groove, and so be pulled out again. After all this was done one stitch was made in the urethra, but the external wound in the skin was left for the passage of the urine, that it might not insinuate itself into the cellular membrane. We dressed the wound superficially, and applied the T bandage, which was slit to go on each side of the scrotum, and just where it came to the scrotum we tied the two ends together, which supported the scrotum and kept it forwards on the penis; and the two ends that came from this knot on each side of the scrotum were tied to the circular part that came round the body. The patient had some slight fever for a day or two, and the urine came partly through the bougie and partly by the side of it, through the wound. A swelling of one testicle came on; likewise a swelling of the glands of the groin, pain in the belly, sickness, and at times vomiting, all which symptoms were owing to sympathy, and entirely went off in five or six days. The water, in nearly the same time, came entirely by the natural passage. The bougie was changed from time to time till the cure was completed.

[RICORD.—After reading what Hunter says of false passages, any one will be convinced that if this accident was not rarer, much less was known about it in his time than at the present day.

Since all parts of the urethra, without exception, are capable of becoming the seat of strictures, false passages may consequently be made, or may be found already existing, in any portion of this canal. Both the fixed and movable portions present numerous examples of it. Thus, Hunter speaks of false passages in the spongy portion of the urethra; and Charles Bell and many others mention instances, without counting all those which have not been reported. However, it is very certain that false passages are found most frequently in the curved or membranous part of the canal, although they may also occur in the prostatic portion both within the substance of the gland and at the neck of the bladder. They are most commonly made in the inferior wall of the canal, especially in the membranous portion, but they may also occur on all sides of the urethra, as, for instance, in the superior wall, at a point corresponding to the suspensory ligament, when the surgeon, in passing a catheter, forgets the direction which the canal follows in this region, from above downwards and from before backwards, and depresses the handle of his instrument too soon. Variable in their size and length, they may terminate in a *cul-de-sac*, or may enter a neighboring organ, as the rectum; or else, after having made their way through the tissues for some distance, they may reach the bladder, either passing through its anterior wall, or more frequently by the natural passage posterior to the stricture, or again by piercing the substance of the prostate; fistulæ may also enter the bladder behind this gland, and perforate its sides or *bas-fond*. In the latter case the instrument which makes the false passage may pass between the

bladder and the rectum, or may reach the bladder after entering and again emerging from the intestine, as in the case reported by Deschamps.

Hunter has not dwelt on the circumstances which favor the production of false passages. They may be found in the situation of certain strictures, in the fixed position of the parts of the urethra beneath the pubis, and in the changes in direction which the canal undergoes, arising especially from abnormal or pathological states of the prostate, the accumulation of fecal matter in the rectum, and the consequent distension of this intestine at the time of catheterization for certain deep strictures; but, in addition to these causes, we must seek for others in the character of the strictures, in the condition of the tissues situated in front of them, in the nature of the instruments employed to pass or force them, and in the prudence and ability of the surgeon.

The harder, more callous, tougher, and less dilatable strictures are, the more easily false passages are made; the narrower the passage is the more this accident is to be feared; this is especially true if the stricture is very long, or if many strictures follow each other, so that the first interferes with passing the instrument through the second, and so on. When the tissues in front of a stricture are softened by chronic inflammation or otherwise, perforations may easily occur without the stricture necessarily being very large.

The instruments employed have a great influence in the production of false passages. Supple and flexible instruments are the least dangerous, and rigid instruments the most dangerous. Their volume should be adapted to the size of the opening in the stricture. Yet in soft or spasmodic strictures, it is better that they should be a little large. But, as a general rule, the less the diameter of the instrument, the greater the danger. Straight and rigid instruments, used in the portion of the urethra posterior to the suspensory ligament of the penis, have occasioned frequent accidents.

Though instruments produce false passages with the greater ease in proportion as they are pointed—as, for instance, conical sounds, which have been too highly praised, and perhaps too much censured also—the lesions which they cause in this case are less serious than those which result from the use of larger instruments, whose volume is not proportioned to the stricture. In fact, in the first case you often have merely a simple perforation, a kind of acupuncture; whilst in the second case you bruise the parts, lacerate them extensively, and even tear out fragments of the canal.

Pressure on the front of strictures, in the cure by ulceration, as Hunter calls it, and cauterization, more particularly when applied from before backwards, also give rise to false passages; the same is true of the various cutting operations of which we have spoken.

However, the most fruitful cause of false passages is perhaps the hand of the operator. An imperfect acquaintance with anatomy, want of practice, and too great haste, have caused accidents where they might have been avoided, in spite of all other causes combined. Take hold of the sound as low down as possible, so as to better judge of the obstacle to be overcome and the route to pursue; draw the penis towards the

instrument, so as to stretch the urethra and obliterate so far as possible the *cul-de-sac* in front of the stricture; follow the instrument with the finger externally in its course to the end of the perineum; introduce one finger into the rectum, so as to accompany it at its entrance into the prostatic portion, and prevent its deviating from its course; take the more time for the operation the more difficult it is; use well-directed efforts to push the sound forwards only when you feel its point grasped by the tissues, and thus know that it is engaged within the stricture; these are the rules for the surgeon to follow, which, added to the choice of good instruments, will protect him from accidents that, alas! are too common, when a desire to shine by a rapid operation is joined to ignorance.

Hunter, as has been seen, says nothing of the signs by which false passages may be recognized. A flow of blood at the moment the sound or bougie is introduced is of little value in this respect. In some patients, the urethra bleeds with great facility without the instrument deviating from the natural passage. In others, the bleeding is owing to a softening of the mucous membrane. It is not true that the first passage of a sound in any person is generally followed by a flow of blood, even if there be no morbid change in the canal. The feelings of the patient are equally deceptive. Some exaggerate their suffering, and think themselves wounded every moment, especially about the fossa navicularis, the bulb and the neck of the bladder; hence, even those who have nothing the matter with them may be made to believe that these regions are the seat of disease; whilst others, because they suffer less than they expected, will let you pierce the walls of their urethra without any expression of pain. However, when patients complain of a tearing or pricking sensation, we must redouble our attention and care. Generally, they suffer more when the urethra is torn than when the instrument passes the stricture; the sensibility of the latter not being always so great as has been asserted. Nevertheless, I must add, that when once engaged in a false passage, a sound or bougie is less painful than when it remains in a stricture. With regard to the amount of resistance, it is very certain that in most cases the sound parts resist less than the diseased parts, and that in some cases we might be deceived by the ease with which we pierce the tissues. The tearing sensation, which surgeons and patients detect immediately, may be due to the rupture of a band, or to a sudden bruise of the constricted part, and also to the division of the tissues in front of it. But when we have entered a stricture which offers some degree of resistance, the instrument is grasped by it, which does not take place when a false passage is made. The coincidence of the instrument with the axis of the urethra; the possibility or impossibility of rotating curved instruments, which are supposed to have entered the bladder; the flow of urine from the catheter, when one is used—are often deceitful signs. Indeed, we may have made a false passage, at the same time following very nearly the axis of the canal, and the instrument may have reached the bladder by one of those accidental routes, of which we have spoken, without our knowing it, except from subsequent symptoms, which fortunately do not always arise. On the

other hand, without departing from the natural passage, the instrument may be grasped by the constricted part, be inclined to one side or the other in eccentric strictures, and, impeded by the bladder, whose capacity is decreased by thickening and contraction of its walls, may lead us to believe that it has taken a wrong course, especially if the eyes of the catheter are plugged up with mucus or blood, so as to prevent the urine from escaping. But, in addition to the symptoms which I have just examined, I must mention, as of greater value, the impressions that may sometimes be taken by means of Ducamp's exploring sound, or by bougies of soft wax; also a digital examination through the rectum, and especially the amount of constriction that the instrument undergoes.

If what Hunter says were true, most false passages would be serious affairs, and would require operations still more serious, but it is not so. When there is no complete retention of urine, and patients can empty their bladder; when the false passage is made by an instrument of small diameter, and when it has not reached the bladder back of the stricture, it is commonly a slight accident, which patients, and sometimes inexperienced surgeons, do not detect. When it is known, it is sufficient to let the patients rest a few days before introducing new instruments, and then the parts contract and cicatrize; the urine, on account of the position, and especially the direction of the passage, tending rather to approximate its walls than to introduce itself between them unless there be a false passage *returning on itself*, as may occur when a bougie bends and forms a hook in front of the stricture.

Local inflammatory symptoms or general sympathetic reaction may supervene in cases of bad ruptures, violence by large instruments, or destruction of the tissues by cauterization, &c. But so long as the false passage does not communicate with the reservoir of urine, either when first made by the instrument or by a subsequent process of ulceration, and the patient can pass his water, we have still much to hope, if we will wait and meet the symptoms with suitable treatment. It is only when ruptures are large and extended, the retention of urine complete, and prompt evacuative catheterization urgent, that we are to expect the most unpleasant results, and are forced to have recourse to operations analogous to those of which Hunter speaks, or to puncture the bladder, or finally to contend against symptoms arising from effusion of urine. However, in some cases, when the instrument has made a false passage into the bladder, and patients are able and especially are desirous of retaining it, everything goes on well, and a new canal soon forms, provided with a false mucous membrane. In all cases when a false passage is made, its direction should be remembered, or, when another surgeon has sounded before you, its course should be ascertained by taking impressions of the canal, so as to give the instruments a curve and direction which will prevent their falling into it a second time.—RICORD.]

CHAPTER VI.

OF DISEASES IN CONSEQUENCE OF A PERMANENT STRICTURE
IN THE URETHRA.

STRICTURES in the urethra produce almost constantly diseases in the parts beyond them; that is, in the part of the urethra between the stricture and the bladder. They bring on in most cases a gleet, as has been described, and often a considerable distension of the part of the canal beyond the stricture; also inflammation and ulceration, and in consequence of them diseases in the surrounding parts, as in Cowper's glands, the prostate, and the surrounding cellular membrane, forming abscesses there, and at last ulceration, for the purpose of making a new passage for the urine. The bladder is also often affected, and sometimes the ureters, with the pelvis of the kidneys, and in some cases the kidneys themselves. All these are effects of every permanent obstruction to the urine; some of them are methods which nature takes to relieve the parts from the immediate complaints; such are the increase of the urethra beyond the stricture, and the enlargement of the ureters and pelvis of the kidneys, which are only to be considered as the parts accommodating themselves to the immediate consequence of the obstruction, which is the accumulation of urine. Of these complaints I shall take notice in their order.

§ 1. *Of the Enlargement of the Urethra.*

The urethra beyond the stricture I have observed is enlarged, because it is more passive than the bladder, and yields to the pressure of the urine. It is naturally passive while the bladder is acting, by which means it becomes distended in proportion to the force with which the bladder acts, and the resistance of the stricture. Its internal surface often becomes more irregular and fasciculated. It is also more irritable, the distension becoming often the immediate cause of spasms in that part, and these spasms are most probably excited with a view to counteract the effort produced by the action of the bladder.

[RICORD.—When there are several strictures, an enlargement of the canal is rarely observed, except behind the one which is nearest to the bladder. Between the others the urethra often appears contracted without its walls being affected. The latter are even free from the chronic inflammation and morbid secretion which are met with back of the posterior stricture.

These dilatations have been justly compared to aneurismal enlargements, some of whose phases they resemble.]

§ 2. *Of the Formation of a New Passage for the Urine.*

When the methods recommended above for the removal of a stricture have either not been attempted or have not succeeded, nature endeavors to relieve herself by making a new passage for the urine, which, although it often prevents immediate death, yet, if not remedied, is productive of much inconvenience and misery to the patient, through life. The mode by which nature endeavors to procure relief is by ulceration on the inside of that part of the urethra which is enlarged and within the stricture. The ulceration commonly begins near or close to the stricture, although the stricture may be at a considerable distance from the bladder; therefore we must suppose that there is some circumstance besides the distension of the urethra by the urine which determines the ulceration to a particular part. This circumstance most probably arises immediately out of its vicinity to the stricture, and may be called contiguous sympathy. The stricture is often included in the ulceration, by which it is removed, the disease cured, and a stop sometimes put to the farther ulceration; but unluckily this is not always the case. We may observe that this ulceration is always on the side next to the external surface, as is common in abscesses.

As this ulceration does not arise from preceding inflammation, and as it cannot be said that the urine acts exactly as an extraneous body, because it is in its natural passage, we find that there is but very little inflammation of the adhesive kind attending these ulcerations. We must allow, however, that the urine produces the ulcerative disposition here, like matter on the inside of an abscess, although not so readily.

Whenever, therefore, the internal membrane and substance of the urethra are removed by absorption, the water readily gets into the loose cellular membrane of the scrotum and penis, and diffuses itself all over those parts, not having been previously united by the adhesive inflammation; and as the urine has considerable irritating powers when applied to the common cellular membrane, the parts inflame and swell. The presence of the urine prevents the adhesive inflammation from taking place; it becomes the cause of suppuration wherever it is diffused; and the irritation is often so great, more especially in cases where the urine has been allowed to become very stale, that it produces mortification, first in all the cellular membrane, and afterwards in several parts of the skin, all of which, if the patient live, slough away, making a free communication between the urethra and external surface, and produce fistulæ in perinæo.

We may observe, however, that the want of the adhesive inflammation in these ulcerations appears to be peculiar to that part of the urethra which lies between the membranous part and the glans penis; for we find from experience that when this process takes place farther back, as in the prostate gland, a circumscribed abscess is generally formed. This may arise from the difference in texture of the cellular membrane of the parts, the first admitting of the diffusion of the urine very readily from the looseness of its texture, the other producing

adhesions before the urine is allowed to pass, which adhesions afterwards exclude it.

It sometimes happens that the urine gets into the spongy substance of the body of the urethra, and is immediately diffused through the whole, even to the glans penis, producing mortification of all those parts, as I have more than once seen.

When the urine has made its way into the cellular membrane, although the ulceration of the urethra is in the perineum, yet it generally passes easily forwards into the scrotum, that part being composed of the loosest cellular membrane in the body. When the seat of the ulceration is in the membranous or bulbous part of the urethra, and the pus and urine have found their way to the scrotum, there is always a hardness extended along the perineum to the swelled scrotum, which is in the tract of the pus.

Ulceration cannot be prevented but by destroying the stricture; but when the water is in the cellular membrane, which is the state we have been describing, the removal of the stricture will in general be too late to prevent all the mischief, although it will be necessary for the complete cure; therefore an attempt should be made to pass a bougie, for, perhaps, the stricture may be included in the ulceration (as was mentioned before), and thereby allow a bougie to pass. When this is the case, bougies must be almost constantly used to procure as free a passage forwards in the right way as possible. When the bougie will not pass, I am afraid that the caustic, as described in the case of a stricture, would in many cases be too slow in its operation; and in others it cannot be tried, as the situation of the stricture is often such as will not admit of it.

While we are attempting the cure of the stricture, every method is to be used that removes inflammation, particularly bleeding. Great relief may be obtained by exposing the parts to the steam of hot water; but this is merely a palliative cure. The warm bath, opium, and the turpentine, given by the mouth, and also by the anus, will assist in taking off any spasmodic affection; but all these are too often insufficient, and therefore immediate relief must be attempted, both to unload the bladder and prevent any farther effusion of urine into the cellular membrane. This must be done by an operation, which consists in making an opening into the urethra somewhere beyond the stricture, and the nearer to the stricture the better.

The method of performing the operation is first to pass a director or some such instrument into the urethra as far as the stricture; then to make the end of the instrument as prominent externally as possible, so as to be felt, which in such a case is often difficult, and sometimes impossible. If it can be felt, it must be cut upon, and the incision carried on a little farther towards the bladder or anus, so as to open the urethra beyond the stricture; this will be sufficient to allow the urine to escape and to destroy the stricture. If the instrument cannot be felt at first by the finger, we must cut down towards it, which will bring it within the feel of the finger, and afterwards proceed as above directed.¹

¹ This is the operation which Mr. Syme has lately revived.—*RECORD*.

If the stricture in the urethra be opposite to the scrotum, it being impossible to make the opening there, it must be made in the perineum, in which case there can be no direction given by an instrument, as one cannot be made to pass so far; therefore we must be guided by our knowledge of the parts. The opening being made, the stricture is to be searched for as described in the operation, in cases where a false passage has been made, by passing a probe from the wound forwards towards the glans. The other steps of the operation will be nearly the same. In whichever way the operation is performed a bougie must be introduced, and the wound healed up over it. In my opinion a catheter answers this purpose better.¹

Great attention should be still paid to the inflammation, which arises in consequence of the urine having been diffused in the cellular membrane, as before described. Where the inflammation is attended with suppurating and mortification, it will be necessary, as well in this case as in that where no operation is required, to scarify the parts freely, to give an opening both to the urine and pus. Where mortification has taken place on the skin, the scarifications should be made in the mortified parts, if it can be done with equal advantage, and this with a view to prevent irritation.

In total suppressions of urine, from whatever cause, the urine should never be allowed to accumulate, and should either be drawn off frequently or a catheter should be kept continually in the urethra and bladder, because we should on no account allow the bladder to be distended beyond an easy state; for if it be, it always brings on debilitating and alarming symptoms, as paralysis of that viscus. In many suppressions of urine, as in cases of strictures, it is impossible to draw off the water. In some cases, where the urethra is ulcerated, and the urine gets into the cellular membrane of the penis and prepuce, so as to distend them much, producing a phimosis, it becomes impossible to find the orifice of the urethra. The following case illustrates most of the preceding doctrines:—

A gentleman, of a scrofulous habit, had often had venereal gonorrhœas, which, being severe, commonly produced swellings, or knobs, along the urethra, upon which account he was advised to avoid this disease as much as possible. When in the country, in November, 1782, he was attacked with a slight cold or fever, and a small discharge from the urethra, which he could not determine to be venereal. In this state he set out for London, but was seized on the road with a suppression of urine, which detained him two days at an inn. On his arrival in London, I found him feverish. He spoke to me only of a discharge from the urethra; but as I did not conceive that the fever could arise from that cause, I desired him to be easy on that account. He was taken with a shivering fit, which made us suspect it might terminate in an intermittent, and we waited for the result. He still complained of the discharge, and mentioned a soreness in the perineum, both when he made water and when he pressed it externally. On

¹ Puncture of the bladder above the pubes should often be preferred.—RICORD.

[Puncture of the bladder through the rectum, except in case of an enlarged prostate, should be preferred to puncture above the pubes.—Ed.]

examining the perineum, I found a fulness there, from which I suspected a stricture, and inquired particularly how he made water in common; he declared very well, which led me from the true cause. This swelling was regarded as the effect of an inflammation, either in consequence of the fever, the disposition of the part, or both, increased by sitting in a postchaise for several days. The part was fomented and poulticed, and leeches were applied several times. He had another shivering fit three days after the first, which, if his disease had been an intermittent, would have constituted a quartan; but he had another some hours after, which made us give up our suspicions of an intermittent. We now began to suspect that matter was forming in this part, although I could not feel anything like a fluctuation; nor was the pain of the throbbing kind, or so acute as we commonly find it in the suppurative inflammation. What in some degree surprised me was that the swelling came forwards along the body of the penis towards the os pubis, while it seemed to be diminishing in the perineum. He now began to find a difficulty in making water, with a frequent desire, which increased till there was a total suppression. I pressed on the lower part of the belly to determine whether or not the urine was secreted and accumulated in the bladder; but I could not feel any fulness; nor did he then feel pain on pressure; however, about twenty-four hours after, he began to complain of a great desire to make water, and a pain in the lower part of his belly, and, the hand being placed there, a fulness of the bladder was readily felt. It was now clear that the water ought to be drawn off; but, as I still suspected mischief in the urethra as a cause in his complaint, I took the necessary precautions. I provided myself with catheters and bougies of different sizes; and, to be as much upon my guard as possible, I introduced a bougie of a small size first, and found a full stop about the bulbous part of the urethra; I then took a smaller, which passed, but with difficulty. I afterwards passed a small catheter on to the stricture, where it stopped; but, as it was absolutely necessary that the water should be drawn off, I used more force than I otherwise should have done; it went on, but with difficulty, and I was not certain whether it was in the natural passage or was making a new one. When the bougie had gone so far as certainly (if in the right passage) to have entered the bladder, I found that no water came; I therefore pressed the lower part of the belly, and the water immediately came out through the catheter, whence it appeared that the bladder had lost its power of contraction. The water was drawn off three times every day, that is, every eight hours, to give as much ease to the bladder as possible; but still, it was necessary to press the belly, to assist the discharge of the urine; and it was upwards of a fortnight before the bladder began to recover its power of contracting. The swelling in the perineum still continued, advancing along the body of the penis, and spreading a little on the pubes; it seemed to extend along the projecting part of the penis, and at last filled the whole cellular membrane of the prepuce, but did not in the least affect the scrotum. This swelling appeared to be owing to the urine having found its way into the cellular membrane of the perineum, and from thence proceeding

along the side of the penis. When the prepuce became much loaded with water, a very considerable phimosis took place, which made the introduction of the catheter into the orifice of the urethra very uncertain, so much did the swelled prepuce project over the glans. I was obliged to squeeze the water back into the body of the penis, and introduce a finger and feel for the glans, and on this finger introduce the catheter; and in a few minutes I generally found the orifice.

The nature of the case was now plain; for ulceration had taken place beyond the stricture, and the swelling had arisen from the urine having insinuated itself into the cellular membrane of the perineum; and as the urine escaped from the urethra, it was pushed forwards where the cellular membrane was loosest, till it got to the very end of the prepuce as before mentioned.

By this time he was become extremely low and irritable; his pulse quick and small; his tongue brown, dry, and contracted; his appetite gone, with great drought, bad sleep, and the first stages of a delirium coming on. This discovery of the true state of the case gave a change to the mode of treatment. Instead of evacuation to lessen inflammation, the bark and cordials were given, with as much food as his stomach would bear. Their effects on the constitution were almost immediate, and he began to recover, although but slowly. I made two punctures in the phimosis at the extremity, with a view both to take off the tension and to evacuate the urine from the cellular membrane, between the penis and the skin.

Blisters began to form on the skin of the penis, and at last mortification took place in several parts, especially on the prepuce, which I divided at the mortified parts, and thereby the glans became exposed, so that the catheter could now be introduced easily.

Upon squeezing the swelling, from the perineum forward along the penis, I could force out at the mortified parts, air, water, and some matter. The cellular membrane under the skin was almost wholly mortified. When bounds were set to the mortification, the sloughing cellular membrane began to separate; and a good deal was cut away to keep the parts clean, and to allow of a freer vent for the matter. Now that separation was taking place, it was clear that no more water from the bladder could insinuate itself any farther into the surrounding cellular membrane; therefore it was not necessary to pass the catheter any more, and the patient was allowed to make water whenever he had a call, which, when he did, the water came both ways, through the urethra and through the cellular membrane, at the openings where the skin had sloughed off. As the sloughs separated they came forwards from behind, at the side of the scrotum, so that I could draw them out; and when most of the mortified cellular membrane was removed, I saw a part, about the size of a sixpence, of the tendinous covering of the corpus cavernosum dead, which was allowed to slough off. Most of the water now came through the sore. The parts became more painful; he was more restless, and one morning he had a shivering fit. I endeavored to pass a bougie down the sore, between the skin and penis, but could not; in the evening of the same day a gush of matter and blood came out of the sore, which immediately relieved him, and he began to

mend again, and continued to do so, both in the parts and his general health, the water coming both ways, but often varying in quantity between the two passages; more and more, however, came the right way, till at last the new passage closed up entirely.

While the external parts were healing I passed a bougie occasionally, to keep the passage clear and open. To find out the situation of the internal opening, I ordered the patient to press on different parts of the perineum while he was making water, by which means he found that by pressing upon a particular spot he could stop the water from flowing through the new passage. He was directed, however, not to press too hard, for fear of forcing together the sides of the natural passage. Upon erections, the penis was bent to the side that had suffered; but in time the parts gradually recovered their natural form.

§ 3. *Of Inflammation in the Parts surrounding the Urethra.*

Inflammation arising from distension and irritation of the urethra often extends considerably farther than the surface of that canal, for the surrounding parts become the seat of inflammation, the situation of which will commonly be according to the situation of the stricture, producing the distension. Thus, we find the inflammation affecting the prostate glands, the membranous part of the urethra, the bulb, and probably Cowper's glands, with other parts of the urethra between the bulb and the glans. But inflammation in the surrounding parts of the urethra is not always a consequence of distension or stricture; it arises often from other irritations in this canal, such as violent gonorrhœas and very irritating injections. When inflammation attacks these parts it is of the true adhesive kind, and therefore when suppuration takes place an abscess must be formed, unless the inflammation be resolved. The matter, according to a general principle in abscesses, points externally; when the seat of the abscess is either in the prostate gland, membranous part, or in the bulb, the matter will point in the perineum; or the abscess may be formed forwards in the scrotum, or before it, according to the situation of the stricture.

The seat of these abscesses is generally so near the inner surface of the urethra that the partition between them often gives way, and they open internally, as frequently happens in an abscess by the side of the rectum, so that the matter is at once discharged by the urethra, or carried back into the bladder to be discharged with the urine. When the internal opening only takes place, I believe it is owing to the ulceration on the inner surface of the urethra, as has been already described; and in these cases also the stricture is sometimes involved in the abscess and ulceration, by which means the water will find a free passage forwards; but the urine has also a free passage into the abscess, which we may suppose retards its healing, and often becomes the cause of its opening externally; but here, from the adhesive inflammation having taken place, the urine cannot insinuate itself into the surrounding cellular membrane, so as to produce the consequences mentioned in treating of the way in which Nature endeavors to relieve herself. In such cases we find that upon pressing the abscess externally the matter is

squeezed into the urethra, and so out by the glans. It sometimes happens that a catheter can be introduced into the opening of such an abscess, by which means it can be washed by injecting something through the catheter, whereby probably it may be sooner healed. It more frequently happens that such abscesses open both internally and externally, discharging themselves both ways.

These ulcerations and suppurations, of both kinds, are to be considered as efforts of nature, or, to speak more physiologically, as a natural consequence arising from such irritation, by which, as the urine cannot pass by the old passage, a new one is made to prevent farther mischief.

Both these diseases, when they open externally, if not properly treated, often lay the foundation for the complaint commonly called the fistula in perinæo, which is owing to the bottom of the abscess having a less disposition to heal than the external parts. It may be farther supposed that the urine, passing into the abscess by the inner orifice, and making its escape into the external, keeps up a constant irritation in the sore, which in some measure may prevent a union of the sides, and rather dispose them to form themselves into a hard callous substance, the inner surface of which loses the disposition to union, and assumes the nature of an outlet.

But it is more than probable that the cause which prevents these abscesses from healing depends upon their first action often continuing in full force; that is, a diseased state of the internal parts, as will be farther illustrated when we shall treat on the fistula in perinæo. They often heal up at the orifice in the skin, especially if the water has a free passage forwards; but if the internal opening is not perfectly consolidated, some water will insinuate itself into the old sore, become the cause of fresh inflammations and suppurations in the surrounding parts, which frequently open externally in different places, not following the old canal, although they sometimes communicate with it and form branches, as it were, from the principal trunk. I have seen the scrotum, perineum, and inside of the thigh, full of openings, which were the mouths of so many sinuses leading to the first-formed abscess. When the abscess opens only externally, which is seldom the case, it is to be considered as a common abscess.

When these inflammations arise from stricture, the difficulty in making water is increased in the time of the inflammation, which is generally so great as to compress the sides of the urethra together for some way; besides, the stricture itself will become tighter from being inflamed. Inflammation in these parts, even when it does not arise from a stricture, brings on a suppression of urine; but in such cases a bougie or catheter can be passed, the latter of which, in cases of obstruction arising from contiguous swellings, as tumors, inflammations, and swelled prostate gland, is the proper instrument, as the sides of the urethra would be pressed together immediately upon withdrawing the bougie, by which the urine would be as much as ever prevented from following.

§ 4. *Of the Treatment of the Inflammation in the surrounding Parts.*

The inflammation of these parts is to be treated like other inflammations. Resolution is much to be wished for; but it is almost impossible it should take place where stricture is the cause. When the stricture is removed, either by ulceration or a bougie, we have only the inflammation to contend with; but this seldom happens, for the inflammation is but too often accompanied with suppuration.

When suppuration takes place, the sooner the abscess is opened externally the better, as that may in some cases be the means, though seldom, of preventing its opening internally; yet it may prevent the inner opening from becoming so large as it otherwise might be. The opening externally should be large; and if the stricture is not involved in the suppuration, then it must be destroyed, because there can be no cure while the water passes through the new opening. I have succeeded with the caustic even in strictures of long standing.

When the stricture will admit of the passage of a bougie through it, it is to be kept almost constantly in the urethra, and to be withdrawn only at the time of making water; this will allow the urine to pass more freely through the urethra without escaping through the sore. The sore must be healed from the bottom.¹

Hollow bougies are recommended in such cases, after the stricture is destroyed, to prevent the urine passing through the wound. This instrument admits of a constant dribbling of urine through it; but the bougie may be occasionally stopped up, and the urine permitted to pass when there is a desire to make water. It becomes, under certain circumstances, the worst instrument possible; for if its canal is not of a size sufficient to let the water pass as freely as the contraction of the bladder requires, the water will pass easily by the side of the bougie to the abscess, and, not getting forwards beyond the stricture, flow out at the abscess; to avoid this effect as much as possible, the hollow bougies should be as large as the strictured part will allow, and its sides should be as thin as possible, that its passage may be the larger. The elastic gum has these two properties in a higher degree than the spiral wire covered with waxed cloth. But, as I doubt very much that the passage of the urine may be a hindrance to the healing of the sore, I am the less solicitous about such practice; for we find that after lithotomy the parts heal very readily; and even in this operation the external parts which are not diseased heal up very readily. I suspect that the want of disposition to heal arises from the strictures not being sufficiently subdued, or the deeper parts not being in a healthy state.

When these suppurations are left to themselves, and no method tried to remove the stricture, and of course nothing introduced into

¹ Added: "In many such cases of abscess in perinæo, where the stricture has been destroyed, the passage at that part is so irregular that the catheter is the best instrument to use; and where the parts are much contracted, a flexible catheter may be readily introduced down to the stricture, and then a curved stylet passed into it, which will admit of its being directed into the bladder. In this way I have sometimes succeeded when all other attempts have failed."—HOME.

the urethra, the stricture sometimes closes entirely, so that no water can pass forwards through the urethra; and, therefore, before any attempt can be made to heal the fistulous orifices, a passage must be made through the united parts. This cannot be done with a bougie; and if this union of the parts is before the bend of the urethra, which most commonly it is, nothing but the caustic can be applied with any prospect of success, as we shall mention more fully in treating of the fistula in perinæo.

[RICORD.—Since Hunter's time, the subject of infiltrations of urine has advanced only in proportion as our anatomical knowledge has increased, and especially our knowledge of the surgical anatomy of the genito-urinary organs, the pelvis, and particularly the perineum. There is no doubt but that our acquaintance with the arrangement of the fasciæ which lately have been so carefully studied, has thrown light on the course which the urine may pursue, according to the situation of the rupture, and that in some cases we may arrive at a more certain diagnosis. But, on the whole, recent investigations have made but little change in our knowledge of this subject.

As may be seen from what Hunter says, and especially as numerous facts in pathological anatomy have since taught, there is no part of the urinary passages which may not afford an abnormal outlet to the urine. The accidental openings through which this fluid escapes are produced either by a sudden rupture of the canal or by the gradual progress of ulcerations, commencing in the interior of the urinary passages, or involving them from without. In the first instance, they may result from operations, such as lithotomy, the *boutonnière* operation, the opening of abscesses, the introduction of sounds, and the production of false passages; or else they may occur in consequence of efforts made by the bladder, and the muscles which co-operate with it, to overcome a stricture, behind which the tissues are generally morbidly affected, and finally give way. In the second case, the accidents in question often occur even when the patient passes his water tolerably well, and evacuates his bladder without any great effort. In all cases, the rapidity and extent of the infiltration are proportioned to the size of the accidental opening, and especially to the severity of the stricture which obstructs the course of the urine. When the opening is narrow, the urethra tolerably free, and the urine oozes away rather than is forced into the tissues, effusions become circumscribed and confined by the inflammation which precedes or accompanies them, or by the anatomical arrangement of the tissues, and particularly of the fasciæ. In these cases, the abscesses which are formed maintain their communication with the rupture, and are emptied into the bladder or urethra, according to their situation and the freedom of the canal, or finally open externally, and give rise to complete fistulæ. But in some cases, to which Hunter does not refer, the urine having escaped through small openings, which afterwards close, the succeeding abscesses, although on being opened they present all the characteristics of urinary abscesses, do not afterwards transmit the urine or form fistulous passages.

However, in considering the production of inflammations in the

neighborhood of the urethra and bladder, we must take into account the influence exercised by instruments which are employed to overcome strictures. These are often the only cause of accidents, even when we should least expect it, judging from the degree of dilatation already obtained.—RICORD.]

[EDITOR.—Besides the abscesses which form in the neighborhood of the urethra in consequence of rupture of its walls and infiltration of urine into the cellular tissue, others sometimes occur which are entirely independent of any escape of this fluid, or even any obstruction to its free evacuation. Such abscesses commonly depend on irritation of the canal, especially in its deeper portions, and about the neck of the bladder. Thus they are sometimes seen to occur during the use of a permanent catheter, when worn in consequence of paralysis of the bladder, although the urine escapes with perfect freedom through the instrument. Again, in treating strictures of the canal, they are often formed after using bougies, even though no violence has been employed, and though the patient passes his water with comparative ease.

The swelling preceding the formation of the abscess will frequently subside if the irritating cause be removed. If the abscess be opened, pus escapes, without any admixture with the urine. Its situation, at some distance from the urethra, and even in front of the stricture, as in a case reported by Civiale, often renders any connection between it and the canal extremely improbable; and numerous cases are reported by Charles Bell, Civiale, and others, in which a *post-mortem* examination could discover no trace of such connection.

The existence of these abscesses, independent of any effusion of urine, is clearly recognized by Hunter, who compares them to the abscesses which form in the neighborhood of the rectum. They are also analogous to the collections of matter in the vicinity of the larynx, and to those which sometimes arise about the vagina after irritation of the sexual organs in women by excessive coitus, etc.

Like other inflammations of the parts about the urethra, as inflammation and abscess of the prostate, they frequently react on the canal, rendering it exceedingly sensitive, and compelling us to abstain from the use of all instruments. Such was the case in a patient recently under my care, affected with several strictures, two of which were situated in the spongy portion of the urethra, within three inches of the meatus. After successfully dilating the anterior stricture, by simply introducing bougies, and keeping them in contact with the stricture at intervals during a fortnight, suddenly the stricture appeared to retrograde, the urethra became extremely sensitive, the passage of the urine was difficult, but not impossible, febrile action followed, and an abscess formed in the perineum and another above the root of the penis, compelling me to suspend the use of instruments for several weeks. Still, this extraordinary sensibility is not a constant attendant on the formation of these purulent collections.

The prognosis of these abscesses is generally not serious, if we suspend

the treatment in time. But sometimes they excite severe constitutional reaction, and when deep seated, and scarcely perceptible externally, they may be a source of great perplexity to the surgeon. In such cases, when their situation can be discovered, they should be opened early and freely.—See M. Civiale's *Traité sur les Maladies des Organes Genito-urinaires*, t. i. p. 497. —EDITOR.]

§ 5. *Of the Effects of Inflammation in the surrounding Parts upon the Constitution.*

The effects which these attempts to form a new passage for the urine have upon the constitution are very considerable; much more so than what one would at first suspect. Those cases appear to be most formidable which begin by ulceration on the inner surface of the urethra, and where the water diffuses itself into the cellular membrane of the scrotum and penis.

Those where the inflammation is circumscribed are more of the true abscess, and therefore do much less mischief to the parts than when the urine is diffused in the cellular membrane. In these last, if not soon relieved, the patient sinks, and a mortification comes on. If, before the patient sinks, a separation of the slough takes place, this separation performs the operation of opening, and the patient may recover. We should not, I believe, wait for such separation of the mortified part, but make an opening early, upon the first knowledge of a diffusion of water into the cellular membrane; and we should be guided as to situation by introducing a staff into the urethra on to the stricture. But in some cases this cannot be done; for when the urine gets into the corpus spongiosum it produces mortification of all these parts, and renders the whole so indistinct that often no urethra can be found.¹

The effects that the circumscribed inflammation has upon the constitution is generally not so serious as the above; for mortification as seldom takes place in this as in abscesses in general. When the abscess is from the bulb backwards, there is generally a sharp sympathetic fever, because the abscess will be of considerable size before it gets to the skin of the perineum, and is generally attended with great pain; but this pain goes off by the formation of the matter, especially if opened early.

As there is a great disposition to violent action attended with great weakness, in such cases, more especially in those of the first kind, it is

¹ A staff will not always serve to direct the knife in making incisions into infiltrations of urine or urinary abscesses. The rule to be followed is to incise wherever you find collections of urine and matter: open freely, extensively, and deeply, and the more so, when crepitation is felt in the cellular tissue, when the parts are erysipelatous and threaten gangrene, when the infiltration is not circumscribed, when the obstacle to the course of the urine is complete, and when constitutional symptoms have already appeared. We can only temporize, in some cases, when the abscesses are circumscribed, and the patient still urinates with ease. A wise hardihood is a requisite for success in all cases; for the sooner we succeed in freeing the tissues from the urine which bathes and destroys them, the sooner we put an end to the supervening symptoms.—RICORD.

advisable to give the bark early, and in considerable quantity; but I apprehend it is necessary to give along with it sudorifics, as some of the preparations of antimony, there being generally a good deal of fever. The bark gives strength, and also in some degree lessens irritability; but it should be assisted by other medicines.¹

§ 6. Of *Fistulæ in Perinæo*.

It often happens that the new passages for the urine do not heal on account of the strictures not being removed; and even when the stricture is removed they frequently have no disposition to heal. In both cases they become fistulous, and produce fresh inflammations and suppurations, which do not always open into the old sore, but make new openings externally. These sometimes arise from the first external openings not being sufficiently large, so that they heal up long before the bottom, or long before the diseased urethra, and even when the external opening has been made as large as possible, it will often heal sooner than the bottom, and become fistulous at last.

It is very common for these diseases to affect the constitution so as to bring on complaints of an intermittent kind. I have seen several affected with regular agues, where the bark has produced no effect; but whenever the obstruction has been got the better of, or the fistulous orifice opened and in a state of healing, these complaints have entirely gone off.

To cure this disease, it is necessary first to make the natural passage as free as possible, that no obstruction may arise from that quarter; and sometimes this alone is sufficient; for the urine, finding a free passage forwards, is not forced into the orifice, and the *fistulæ* heal up. The bougie may bring on an inflammation on the urethra at this part, and produce adhesions there; but if this effect is not produced early, the bougie will rather do harm if applied too often, and too long at a time, as will be more fully explained. But the dilatation of the stricture is not always sufficient; it is often necessary to perform an operation on the *fistulæ*, when they alone become the obstacle to the cure, which I shall now describe.

§ 7. Of the Operation for *Fistulæ in Perinæo*.

When the before-mentioned treatment is not sufficient for the cure of the new passages, a method should be followed similar to that used in the cure of *fistulæ* in other parts, by laying them freely open to the bottom, and even making the orifice in the urethra a fresh sore if possible. This will be difficult in many situations of the internal orifice; and the mode of opening, and other circumstances attending the operation, will vary according to the situation.

That as little of the sound part of the inner surface of the urethra

¹ In addition to the facts which Hunter mentions, and the characteristic urinary fever, symptoms of purulent absorption sometimes occur, such as articular abscesses and purulent collections in different organs, as in the lungs, the liver, and other parts, which are beyond the reach of direct infiltration.—RICORD.

may be opened as possible, and that the diseased part may be fully exposed, it is necessary to be well directed to the inner orifice, for which we have commonly two guides; one is a staff introduced into the urethra as far as is thought necessary, or as far as it will go (which will only be to the stricture, where the stricture still exists, or it may pass on to the bladder in cases where the stricture has been destroyed); the other guide is a probe passed into the fistulous orifice. The probe should be first bent, that it may more readily follow the turns of the fistula, and be introduced as far as possible; if it could be made to meet the staff, so much the better, as then the operator could cut just what is necessary. If the fistula is tolerably straight, so as to admit the passing a director, it is the best instrument for operating upon. If neither the probe nor the director can be made to pass on to the staff, we must open as far as they go, and begin searching anew after the remainder of the passage with the same instrument, and pursue it till the whole fistulous canal is laid open. If there are any sinuses, they are to be laid open if possible; but it frequently happens that they cannot be followed by the knife, some running along the penis, where the scrotum is attached, others passing on towards the pubes, round the penis, while others are about the membranous part of the urethra. In such cases some degree of violence may be used, and I have several times introduced my finger into these sinuses, and have torn the parts so as to produce a considerable inflammation, by which means they often suppurate, granulate, and unite.

If the situation of the internal orifice is opposite to the scrotum, it will be difficult to get to it; but I imagine we may use great freedom with the external parts, whatever they are, for they are generally in a state of callosity. However, this requires judgment.

In cases where the disease is before the membranous part and the stricture is not removed, a staff cannot be made to pass on to the inner orifice. In such, the fistulous opening must be followed by the introduction of a probe or director into it, and by dilatation upon the instrument till the urethra beyond the stricture is found; and then a probe must be passed on towards the glans, to meet the end of the staff at the stricture, similar to what is done in the operation where a false passage has been made by the mismanagement of the bougie. The stricture must then be destroyed, and a bougie passed, as was recommended in that operation.

If either the ulceration or the abscess is formed in or near the prostate gland, then probably the stricture is near that part. In that case a staff must be passed as far as possible, and a probe or director introduced into the external orifice, and the operation is to be directed accordingly. The difference of the operation in this case from the former will be that we shall most probably be obliged to cut into the urethra on both sides of the stricture, therefore more of the canal must be exposed.

As this operation is the opening of all the fistulous canals, and also the destruction of the stricture, if there has been one, an instrument can afterwards, in every case, be passed into the bladder. It will most probably always be proper to introduce an instrument into the

bladder, and keep it there almost constantly, so as to preserve the passage of the urethra in a regular form, while the openings made are healing; and probably the catheter will be by much the best instrument, because it is not necessary to be withdrawn whenever the necessity to make water comes on, which a bougie must; and its introduction again is often not practicable, for its end will be apt to get into the wounds.

In such cases as require a hollow canula to be left in the bladder for the purpose of drawing off the water, whether a catheter or hollow bougie, it is absolutely necessary it should be fixed there, or else it will in common come out by the actions of the part. To effect this, it is necessary to fix that end of the instrument out of the penis to some part of the body that is the least movable. What will answer extremely well is the common belt-part of the bag-truss, with only two thigh-straps fixed behind and made to tie or buckle before; and two or three very small rings or short tapes fixed to those straps where they pass between the thigh and scrotum; they should not be at a great distance from one another where they are fixed behind to the belt, for otherwise they are much altered in tightness by the motion of the thigh. If they have a flat spring in them so much the better.¹

The common bag-truss for the scrotum answers extremely well, first by fixing two or three rings on each side of it along the side of the scrotum; and with a piece of small tape the ring of the canula can be fastened to any one of those rings that is most convenient from its situation.

Whatever instrument is used for the purpose of keeping the passage clear and open while the sores are healing, whether the sores are in consequence of this operation, or in consequence of the causes of the fistulæ which I have described, there is a limited time in many cases for its continuance; for if it be continued beyond a certain period, it frequently acts contrary to what was intended; at first, it often assists the cure, but towards the last it may obstruct the healing of the sores by acting at the bottom of the wound as an extraneous body. Therefore, whenever the sores become stationary, I would advise the withdrawing of the instrument, and the introducing it only occasionally. The catheter will probably be still the best instrument for this purpose, as it will pass the more readily, and draw off the water at the same time; however, I have often used a bougie, and by great care have passed it with success; and probably it will be proper to use it every now and then, even when all is healed, in order to determine whether or not the passage is free from disease.

The sore and the wound are to be at first dressed down to the bottom as much as possible, which will prevent the reunion of the parts just divided, and make the granulations shoot from the bottom, so as to consolidate the whole by one bond of union.

When the urethra has suffered so much that abscesses have formed beyond the scrotum, the patient should ever after take great care to avoid a fresh gonorrhœa, for he seldom in that case escapes a return of

¹ Mr. Vanbutchell's springs would answer very well.

the same complaints; and, indeed, if he is not careful in many other respects, he is liable to returns of the same disease. If, notwithstanding this precaution, he should contract a gonorrhœa, everything heating is to be carefully avoided, particularly irritating injections.

The following case shows that keeping extraneous bodies in the urethra prevents wounds made into that canal from healing.

A man, aged twenty-six, came into St. George's Hospital, March 2, 1783. He had labored under a fistula in perinæo for nearly two years, arising from a stricture, attended with great pain and difficulty in making water. Four fistulous orifices were to be observed in the perineum and scrotum. The smallest bougie could not be made to pass into the bladder after repeated trials. The caustic was then applied, but without success.

The operation for the fistula in perinæo was performed September 19. A catheter was first introduced as far as it would go, as a director, and all the sinuses were laid open to that catheter, which exposed near an inch in length of that instrument; then the catheter was in part withdrawn to expose that part of the urethra which was laid bare. The blood being sponged off, the orifice in the stricture was next searched for, and when found it was dilated. The catheter was now pushed on to the bladder, although with some difficulty, and the end of it was then fastened to a roller which went round the thighs; and the wound was distended with lint. He took an anodyne draught after the operation, and another at night. September 20, he had some pain in the head from the opiates; his pulse was natural, and he had slept tolerably well. On the 21st day the catheter slipped out, and the second introduction of it gave considerable pain. The anodyne was repeated. October 1. The catheter was still to be felt by introducing a probe into the wound. From this time to the 25th nothing material happened, excepting a piece of lint of the first dressing coming away through the urethra. November 20. The wound having for some time been stationary, and showing no disposition to heal, I conceived that the catheter was now acting as an extraneous body at the bottom of the wound, and therefore desired that it might be withdrawn, and passed occasionally; and no sooner was the wound free from it but it put on a healthy look, and by the 10th of December no urine came through the wound, but passed tolerably well through the urethra; and on the 12th the wound was quite healed, and the water came from him rather in a full stream and without pain, although we could never pass either catheter or bougie afterwards, probably from the new and old passages being irregular.

[G. G. B.—It is possible that some cases may occur where the operation which is described by the author may be required, but such cases are undoubtedly very rare. The complete removal of the stricture is in almost all instances followed by the spontaneous closure of the sinuses in the perineum. Until the strictured portion is dilated to the same size with the rest of the urethra, there is little improvement. As soon as that is effected, the urine is no longer diverted into the sinus, but takes the more ready course of the natural passage; and the cause which maintained the fistula being thus removed, the opening

gradually contracts, and in a short time heals, without any surgical treatment whatever.]

[RICORD.—The subject of urinary fistulæ is so important that it would doubtless be well in this place to fill the gaps which Hunter's short chapter leaves; but this task, to be complete, demands more space than I have allotted to myself, and I will therefore indulge only in the following considerations.

Urinary fistulæ may take their rise in any part of the passages through which the urine flows. They are incomplete or complete, according as they terminate in a *cul-de-sac* or open externally. They have rarely more than one internal orifice, whilst externally they often present several. The most common situation of the latter is over the course of the urethra, proceeding, in order of frequency, from the perineum to the neighborhood of the frænum. Yet there is no part in the neighborhood which may not become the terminus of a fistulous passage; thus, they often terminate in the rectum in man, and in the vagina in woman.

There may be one or more fistulous passages; they may be direct or oblique, straight or sinuous. When they open into the bladder, the urine flows through them incessantly, as it is secreted. When they open into the canal, it escapes only during voluntary emission. Some circumstances, however, may deceive us on this point. When the internal orifice within the bladder is very near its neck, and this organ habitually contains but little urine, the liquid often accumulates in the *bas-fond*, and is discharged only during voluntary contractions. It may also happen, in cases analogous to the one observed in a woman by my learned friend, M. Jobert, surgeon of Hôtel-Dieu,¹ that the internal orifice, situated at the base of the trigonum, does not permit a continual flow of urine. Pockets, or *cul-de-sacs*, in the course of the fistulæ and retention of the urine in the rectum or vagina may also deceive us. Wherever the situation of the internal orifice of a fistula in the rectum is, the urine is generally discharged only with the stools, although its presence irritates and often excites constant and insurmountable tenesmus. As to the vagina, although the urine remains there during the recumbent posture, it soon escapes in any position which renders the vulva inclined downwards, and in the various efforts which depress the uterus, approximate the vaginal walls, and thus diminish the capacity of the vulvo-uterine canal, whose entrance is much less frequently contracted than some theorists have asserted. The arrangement of the fasciæ, the length and sinuosities of some fistulous passages, and the suppuration which they furnish, may also in some cases give rise to apparently continuous discharges of urine. In all cases, the more numerous fistulæ are the greater alteration the tissues which they traverse undergo; the skin grows thin, is undermined, ulcerates, or else hardens and becomes carnified; gangrene also destroys the cellular tissue wherever adhesive inflammation does not oppose a barrier to the urine; the aponeurotic sheaths exfoliate; the bones themselves are sometimes denuded, become carious

¹ Traité de Chirurgie Plastique, Paris, 1849.

or perforated, and finally degenerations, generally of a malignant nature, may occur in a part where, at first, there was only simple engorgement.

So long as any obstacle obstructs the discharge of the urine through the urethra, fistulæ have little or no tendency to heal; but so soon as the canal becomes free again, their cure is the more rapid the shorter time they have lasted; a fact which should be recollected in the treatment; for recent fistulous passages are not furnished with those false mucous membranes which become organized in the passages through which the urine has flowed a long time.

The temporary use of bougies is often sufficient to cure fistulæ. As the normal calibre of the urethra is re-established, the urine is less and less inclined to pass through the accidental passages, and in a large number of cases a cure soon follows. But this mode of treatment, to which Hunter seems to accord the preference, is not, however, the mode which succeeds the best and the most frequently. A large number of fistulæ yield only to the permanent use of catheters. The urethra must not only be restored to its natural size, but it is also necessary to prevent the urine from entering the fistulæ during emission. But when solid bougies are used, the urine may make its way between them and the surface of the urethra, and thus gain the fistulous orifice, or may enter it still more readily when the bougie is removed for the purpose of urinating. Hence, most practitioners prefer permanent catheters, which are left open, and which, without violently stretching the canal, fill it with sufficient exactitude to make the urine escape through an easy and permanent passage rather than by the fistula. But when a certain degree of dilatation is attained, if we go on increasing it, as Dupuytren used to remark, we often interfere with cicatrization of the internal orifice, by keeping its edges apart, and can effect a cure only by gradually returning to smaller instruments, or by ceasing to use them altogether.

In some cases practitioners have thought that they could favor the complete evacuation of the urine through the catheter by furnishing its beak with a piece of sponge, or, better still, with threads, which, passing through the eyes of the instrument, might act by capillary attraction. They have also attempted to apply the principle of the siphon; but they have not always obtained satisfactory results even with M. Soyer's instrument, in which a continuous current of water tends to produce a vacuum and suck up the fluid. Yet, in all cases where an open catheter is permanently worn, the free admission of air should be prevented, to a certain degree, by means of a bladder attached to its outer extremity.

But instruments sometimes irritate the parts and excite inflammation, various degrees of suppuration, and even ulcerations; and if we continue to use them, the disease, far from being ameliorated, becomes complicated and aggravated. In this case we must either suspend the treatment entirely until the symptoms subside, or at least pursue it only at intervals so far as is necessary to preserve the advantage already gained. In accordance with what Mr. Babington says, and as I myself have already had occasion to remark, the operations of which Hunter speaks

are of rarer application than we should be led to suppose from what he says. However, without making a common mode of treatment out of these operations, which are often useless or even dangerous, perhaps we do not have recourse to them often enough in those cases which resist other more simple means, and which leave patients for months or years a prey to a disgusting infirmity which is fatal in the end. Let it be recollected that it is not always enough to restore the urethra to its former size, but that to effect a cure it is also necessary to destroy the organized fistulæ. These passages should be laid open like other fistulæ, so as to substitute for them simple wounds susceptible of cicatrization. However, before having recourse to an operation, the execution of which may present great difficulties, we should make a trial of caustics. In this case, cauterization should be applied not only to the external orifice,¹ which has naturally a sufficient tendency to close, but it should be made to act chiefly on the deeper parts. I have succeeded in some cases by cauterizing the urethra within and behind the stricture with nitrate of silver, so as to endeavor to reach the internal orifice of the fistula, and then injecting the fistulous passage with a strong solution of this salt; thirty grains or more to an ounce of distilled water. When the fistulous passages have been tolerably large, I have introduced within them a director, with its groove filled with this caustic; or else I have employed a probe, with a thread wound round it, and impregnated with acid nitrate of mercury. I have sometimes obtained favorable results by the actual cautery, which, however, rarely succeeds, except when the fistulæ are direct and of small extent.

But many fistulæ, situated in front of the scrotum, and at different points of the spongy portion of the urethra, resist all these means. Some of these fistulæ consist of simple openings, whose passage between that skin and canal is scarcely perceptible. Others, on the contrary, are due to losses of substance of various sizes, and are, in a measure, cases of hypospadias, to which the name of fistula is inapplicable, since there is only a single opening without a fistulous passage.

One must treat such cases to get an idea of the difficulties in the way of their cure; difficulties which arise from the want of thickness of the cellular tissue, which is very lax in these parts, and from the disarrangement which the process of cicatrization undergoes from the frequent changes in the volume of the penis during erection and collapse.

In three patients at the Hôpital des Vénériens, I have tried the suture recommended by my learned friend Dieffenbach, which consists in surrounding the short passage of the fistula with a thread passed between the skin and the canal, like a purse-string. In these three cases the operation failed, although performed with all possible care. Nay, more, two of the patients were operated upon three times, and the third twice! Each time I introduced some new modification in the operation, without, however, attaining entire success. Sometimes the passage was previously refreshed with tincture of cantharides, sometimes with acid nitrate of mercury, or nitrate of silver. In one patient I previously

¹ Brodie recommends that the external orifice should be cauterized with potassa fusa, so as to keep it open, while nitrate of silver is applied internally.—Ed.

introduced a catheter, and left it open; then, a second time, I uncorked it only when it was necessary for him to pass his urine; and, finally, at the third operation, I left the canal free from any instrument, without any better success. Since the first edition of this work, I have operated upon two new patients by the same method, and have succeeded each time.

The cases of M. Viguerie, of Toulouse, and the happy results obtained by M. Ségalas¹ in losses of substances, or fistulæ of the urethra in front of the scrotum, induced me to have recourse to urethroplastic operations in three patients; two of whom had complete division of the canal near the peno-scrotal angle, the result of ligatures which they applied to themselves in their childhood at the age of seven and eight years; the third had lost nearly two-thirds of the spongy portion of the urethra in front of the scrotum. In the first two patients, I first performed the *boutonnière* operation, and introduced a catheter through the opening into the bladder, so as to draw off the urine during the time necessary for the success of the operation. In the third, I made use of a previous fistula in the perineum, as M. Ségalas did, to introduce a *deflecting* catheter. I succeeded in the three cases. The first operation is recorded in my *Iconographie de l'Hôpital des Vénériens*; the Academy of Sciences accorded me one of the Montyon prizes for it; the last is found in the *Mémoires de la Société de Chirurgie de Paris*. Alion, Astley Cooper, and M. Jobert, the ingenious surgeon of Hôtel Dieu, have succeeded without turning aside the urine; but there are some cases like those I have met, an account of which is given in the works cited, where the *boutonnière* operation, or the employment of a perineal fistula seems requisite to give the happy results which I have obtained.

The little success attending the various sutures employed to remedy different degrees of hypospadias is well known; the results have been similar when they have been applied to accidental losses of substance. Four years ago, in a patient who had lost two-thirds of the inferior wall of the spongy portion of the urethra between the scrotum and the glans, and in whom G. Breschet had already twice tried simple sutures without success, I was equally unsuccessful with one of Dieffenbach's methods, which consists in dividing the skin on each side of the abnormal opening, at a certain distance from its refreshed edges, so as to form two bands of integument, which may be approximated without danger from traction. In the same patient, I afterwards had recourse to a urethroplastic operation, by means of a flap taken from the scrotum; but the operation failed in part, union taking place in only two-thirds of the opening; this was owing to a circumstance which it may be well to mention, viz., that the edge of the borrowed flap was ecchymosed. Finally, with regard to the method, which consists in covering the accidental opening with a collar of the skin, borrowed from the sheath of the penis, I do not think we are yet prepared to form an opinion.—RICORD.]

¹ A Letter to Dieffenbach on the Urethroplastic Operation, Paris, 1843; Memoir on the Urethroplastic Operation, in the Memoirs of the Academy of Medicine, Paris, 1846, vol. xi.

CHAPTER VII.

OF SOME OTHER AFFECTIONS OF THE URETHRA.

THE substance of the urethra is muscular, and it is therefore capable of contracting its canal, similar to an intestine, so as to shut it up entirely. This makes it subject to diseases peculiar to muscle in general; which is, indeed, the only proof we have of its being muscular.¹

§ 1. *Of the Spasmodic Affections of the Urethra.*

In a sound state of the parts these muscles are never excited to violent actions, acting simply as sphincter muscles; but when irritated they are capable of acting violently, as is best seen in some cases upon the first use of injections, the urethra often refusing the injection entirely. This seems rather to be a salutary motion to hinder things from getting into the bladder; but there are often spasmodic contractions of these muscular fibres in different parts of the canal, shutting up the passage and obstructing the course of the urine, often not allowing a drop to pass. That this also is owing to spasm upon the muscular fibres is evident, because a large bougie will sometimes pass when it is at the worst. When the contraction is near the bladder it is called a stranguary, and is often produced in a sound state of the parts by irritating medicines, the power of which falls upon these parts, as cantharides; and when this part is in an irritable state, the spasm may be brought on by a vast number of things, such as most of the peppers, fermented liquors of all kinds, violent exercise, &c.

The urethra, in cases of spasmodic stricture, is more irritable than in the true stricture, which irritation, indeed, is in a great measure the cause of the spasm. Spasmodic strictures often bear so strong a resemblance to the cramp, that one would be apt to attribute them to the same cause as that which produces cramp. In such cases the spasm also goes off by tickling the part, similar to the removal of cramp.

In all cases of very irritable urethras, where spasms very readily take place, the patient should never long retain his urine when he has

¹ The conclusion which Hunter draws from pathology as to the structure of the urethra, is far from being good reasoning. There is no need of muscular tissue for spasmodic affections to take place in the urethra. The tenuity of the spongy tissue is sufficient for that. However, Hunter's ideas have been partially realized;* for anatomy has proved that the so-called membranous portion of the canal is formed of muscular fibres, and that it is generally in this region, and at the neck of the bladder, that we meet with that kind of stricture, which J. J. Rousseau is supposed to have had.—RICORD.

* The researches of Kolliker and Mr. Hancock have shown that the urethra is surrounded by muscular fibres throughout its whole extent, thus fully realizing Hunter's ideas.—ED.

an inclination to void it; for I have seen cases where this alone has brought on the spasm; and indeed these parts, when in perfect health, will be thrown into a spasmodic affection if the urine is too long confined in the bladder; while at the same time a certain fulness of the bladder, or a small degree of retention of the urine, will make the bladder contract with more force, and the urethra will, for the same reason, relax more freely; therefore, in cases where there is a tendency to strangury, there is seldom any harm in waiting a little after the inclination comes on.

I may be allowed here to caution surgeons who have not had opportunities of seeing many of these cases, when they meet with permanent strictures which are becoming troublesome, attended with frequency in making water, and a difficulty in passing it often threatening strangury, not to advise, or rather not to allow, their patients to take long journeys either on horseback or in carriages, more especially in the winter. I have known many patients laboring under such complaints taken ill in the middle of a journey, and obliged to stop for days upon the road, and who have continued in misery the remainder of the journey; and after having arrived at the place of their destination, have been laid up for months, and have suffered from most of the before-mentioned complaints.

[RICORD.—Spasmodic strictures, which we must of necessity admit, have these peculiarities, which distinguish them from other strictures, viz.: that they do not remain permanently confined to one point of the canal; that they are found at different depths, often at short intervals of time, in the same subject; that impressions taken of them at different times are not identical; that they disappear and reappear at intervals; that their duration also cannot be fixed; and that they are generally overcome better with rather a large-sized instrument.]

§ 2. *Of the Cure of the Spasmodic Affection of the Urethra.*

It may not be improper to premise, that in diseases of the actions only of the urethra and bladder, whether spasmodic and proceeding from too great irritability, or paralytic (although two opposite diseases), irritations on other parts have often wonderful effects, equally diminishing the action in the one and increasing it in the other. The proof of this will appear when we shall treat of the irritable and paralytic urethra and bladder; for, in either part, and in either case, we find blisters applied to the lower part of the small of the back or the perineum, as also many other applications to this part, often produce great effects.¹

As spasm simply is not an alteration of structure, but is only a dis-

¹ That the parts concerned in the expulsion of the urine (as the bladder and urethra) sympathize strongly with the skin of the perineum, I believe is commonly supposed, from applications being often made to that part in cases of stoppages of urine.

A gentleman, who had no complaint in these parts, had a small fistula at the side of the rectum, for which he often had occasion to sit over the steam of warm water and vinegar; and this application to the perineum never failed of making him void his urine.

eased or preternatural action arising from some irritation, it may be made to cease instantaneously. In whatever part of the urethra the spasm is, if time will allow, it is proper to try internal medicines, and also external applications, to remove it. The internal medicines that may be said to act immediately are opiates and turpentine,¹ given either by the mouth or the anus; but they are more immediate in their effects in the form of clyster, especially the opium. Bark is often had recourse to in spasmodic affections, in which it is thought to be of service; but in such affections of the urethra I think I have seen it frequently do harm.

The external applications are the steam of warm water with spirits, the pediluvium, the warm bath, bladders of warm water applied to the perineum, and similar applications. The crumb part of a new-baked loaf, warm from the oven, applied to the perineum, has been found to give ease.

I have known a blister applied to the loins in a great measure remove the spasm from the urethra; it is equally effectual when applied to the perineum. But in most cases these methods are too tedious; therefore, when the case has been of some standing, before assistance has been called for, and requires immediate relief, recourse should be had to the catheter or bougie immediately.

If the contraction is near the bladder, the catheter will answer best; but in most cases the bougie will be sufficient, and is a much safer instrument; for in many hands the catheter is a very dangerous one, requiring a dexterity only to be acquired by a thorough knowledge of the course of the canal, and a habit of passing it. The bougie has likewise this advantage that, in many cases, where the part spasmodically affected will not allow it to pass, it may be allowed to lie close to the stricture; for it is not always necessary for the bougie to pass through the constricted part; for a bougie which has only passed a very little way in the urethra has sometimes been effectual, if suffered to stay there till the desire of making water is perceived.

In such cases, even when the bougie passes into the bladder, it is necessary to let it stay in the passage till the inclination to make water comes on. If the water does not follow on the first attempt, it will be proper to make another; or if only part follows the bougie, it will be necessary to introduce it again. This circumstance, of the water following the bougie with more certainty if it is allowed to stay till the inclination comes on, is a proof that the disposition in the bladder to contracting removes in some degree the disposition to contraction in the urethra.

Some attention is necessary with respect to the passing of the bougie in these cases; for the urethra, being more irritable than common, it often resists the bougie before it reaches the true spasmodic part. When this is the case, force is not to be used; but we should rather wait a little with patience, and then make another attempt to

¹ Dr. Home, in his experiments on this medicine, found that large doses brought on the strangury in women.

Strangury is the frequent effect of spirit of turpentine taken for some time.

push it on. Dipping the end of the penis in very cold water often removes the spasm, and the water flows immediately and freely.

In most cases there is an uneasy sensation at the end of the penis, which leads the patient to rub those parts; and sometimes, though rarely, during the friction, the water will pass. Gently irritating injections, thrown in only a little way, often give ease. They may be supposed to act in a manner somewhat similar to a bougie that does not pass, and by irritating one part of the urethra to produce a relaxation in the other. They act in some cases as a preventive.¹

§ 3. *Of the Paralysis of the Urethra.*

In opposition to the foregoing disease, there is the want of power of contraction of the urethra; but this is not so frequent a case as the former. This disease is attended with symptoms contrary to those of the foregoing; the bladder is hardly allowed to be filled so as to give the stimulus of repletion, but the water dribbles away insensibly as fast as secreted by the kidneys; or if the bladder is filled so as to receive the stimulus for expulsion, then it immediately takes place, and the water flows, if the person does not act with the muscoli acceleratores; but sometimes in such cases the power of contraction of these muscles is lost, and then the water will flow whether the person will or not, there being little or no power of retention. There is great difference in the degrees of violence of this disease.²

§ 4. *Cure of the Paralysis of the Urethra.*

It is to be cured by stimulants, as a blister to the loins, or a blister to the perineum. It may be useful to immerse the feet in cold water. Tincture of cantharides, taken internally, fifteen or twenty drops once or twice a day, according to the effects, are of singular service in some cases.

A man came to St. George's Hospital with this complaint. I ordered him the before-mentioned medicine, and it had such an effect as to bring on the contrary disease, or a spasmodic affection of the urethra, so that he could not make water when he had the inclination; but an injection of opium removed this complaint, and he was then well. In this case, a few drops less, probably, would have effected a cure without any inconvenience.

§ 5. *Of Caruncles or Excrescences in the Urethra.*

Strictures are not supposed to be the only causes of obstruction to the passage of urine in this canal; excrescences or caruncles are likewise mentioned by authors as happening frequently. From the familiarity with which they talk of them, and the few instances in which

¹ See pages 162 and 169.

² The affection which Hunter here refers to the urethra should be attributed to functional disturbance or organic lesions of the neck of the bladder.—RICORD.

they really occur, one would suspect that this cause of obstruction was originally founded in opinion, and not observation, and afterwards handed down as matter of fact. If caruncles had been at first described from actual examination of cases, the language would have accorded with the appearances, and they would have been considered as seldom the causes of obstruction compared with strictures. However, they do sometimes happen, although but rarely. I have, in all my examinations of dead bodies, seen only two, and these were in very old strictures, where the urethra had suffered considerably. They were bodies rising from the surface of the urethra like granulations, or what would be called polypi in other parts of the body. It is possible they may be a species of internal wart; for I have seen warts extend some way into the beginning of the urethra, having very much the appearance of granulations. Most probably it will not be possible, in the living body, to distinguish caruncles, excrescences, or risings in the urethra, from a stricture; for I cannot conceive that they can produce any new symptoms or peculiar feel to the examiner.

§ 6. *Of the Cure of the Excrescence or Caruncle.*

I should very much suspect that this disease is not to be cured by the bougie; at least dilatation in such cases is not to be attempted, as there is no contraction. If, therefore, the bougie is of any use, it must be in making the carnosity ulcerate from its pressure, which probably may be done by a large bougie pressing upon it with considerable force. But if this should not have the desired effect, I should certainly recommend or use the caustic, if the parts are so situated as to admit of the application; and from such practice, I should not doubt of a cure. But the difficulty lies in distinguishing the disease from the true stricture; for although authors talk of caruncles as common, and give us the method of treatment, yet they have not told us how we are to distinguish them from strictures.

I have never met with a caruncle in women.¹

CHAPTER VIII.

OF THE SWELLED PROSTATE GLAND.

ANOTHER disease of the parts surrounding the urethra, which is often very formidable, is a swelling of the prostate gland. This is of more serious consequence than any of the former causes of obstruction, because we have fewer methods of cure; for we cannot destroy it as we do the stricture, nor can Nature relieve herself by forming

¹ Vegetations of the urethra are more common in women than in men. (See pages 163, 179, 188, and 193.—RICORD.)

new passages. We have, however, often the means of temporary relief in our power, which is not the case in the stricture; for most commonly we can draw off the water by the catheter.

The swelling of the prostate gland is most common in the decline of life. The use of this gland is not sufficiently known to enable us to judge of the bad consequences that attend its diseased state, abstracted from swelling. Its situation is such, that the bad effects of its being swelled must be evident, as it may be said to make a part of the canal of the urethra, and, therefore, when so diseased as to alter its shape and size, it must obstruct the passage of the urine. When it swells, it does not lessen the surface of the urethra at the part like a stricture; on the contrary, it rather increases it; but the sides of the canal are compressed together, producing an obstruction to the passage of the urine, which irritates the bladder, and brings on all the symptoms in that viscus that usually arise from a stricture or stone. From the situation of the gland, which is principally on the two sides of the canal, and but little, if at all, on the fore part, as also very little on the posterior side, it can only swell laterally, whereby it presses the two sides of the canal together, and at the same time stretches it from the anterior edge or side to the posterior, so that the canal, instead of being round, is flattened into a narrow groove. Sometimes the gland swells more on one side than the other, which makes an obliquity in the canal passing through it.

Besides this effect of the lateral parts swelling, a small portion of it, which lies behind the very beginning of the urethra, swells forwards like a point, as it were, into the bladder, acting like a valve to the mouth of the urethra, which can be seen even when the swelling is not considerable, by looking upon the mouth of the urethra from the cavity of the bladder in a dead body. It sometimes increases so much as to form a tumor,¹ projecting into the bladder some inches. This projection turns or bends the urethra forwards, becoming an obstruction to the passage of a catheter, bougie, or any such instrument; and it often raises the sound over a small stone in the bladder, so as to prevent its being felt. The catheter should, for this part, be more curved than is necessary for the other parts of the urethra. In such cases, I have frequently passed first a hollow elastic catheter till it has reached this point, and afterwards a stylet or brass wire properly curved, so as to go over the prostate gland. The advantages of this method are that, if the hollow catheter passes, no more is necessary; and, if it does not, the curved wire will pass along the hollow bougie much easier, both to the surgeon and patient, than it would have done if it had been introduced at first with the hollow bougie over it; for it would endeavor to adapt the urethra to the curve; whereas, when introduced afterwards, the stylet acts only on the inside of the hollow bougie, which the patient hardly feels.

A gentleman had been often sounded for a stone, and yet no stone could be found; but it afterwards appeared that there was a stone, which, together with the swelling of the prostate gland, had been the cause of his death.

¹ Vide Plates V. and VII.

John Doby, a poor pensioner in the Charter-house, had been several years afflicted with the stone in the bladder, and was relieved from all the symptoms by an enlargement of this part of the prostate gland, preventing the stones from falling down upon the neck of the bladder and irritating those parts. A twelvemonth after that the symptoms of the stone had gone off, he was attacked with a strangury, to relieve which many ineffectual attempts were made, both with the bougie and catheter; but it soon proved fatal. Upon examination of the parts in the dead body, the prostate gland was found enlarged to a size six times greater than what it is in common, and the urethra, passing through it, was a slit about an inch and a half in length, the two sides of which were close together, the upper end towards the pubes and the lower towards the rectum. This slit was formed by the sides of the prostate gland only swelling, and the right side was the most enlarged, having its surface next the urethra rounded or convex, and the left side was exactly fitted to it, having its surface hollowed in the same proportion. The small projecting point of the gland was so much enlarged as to come forwards into the cavity of the bladder, and fill up entirely the passage at the neck of it. The bladder itself was very much enlarged and thickened in its coats, and contained about twenty stones, most of them lying behind the projecting process of the prostate gland, and the rest lodged in small sacs, made by the internal membrane being pushed some little way between the fasciculi of muscular fibres.

The prostate gland, when swelled, generally becomes firmer in its consistence. The effects of these swellings are very considerable, for they squeeze the sides of the urethra close together, and the projecting point hinders in some degree the urine from entering the passage, and in many cases stops it entirely. Farther, the increased firmness of the substance of the gland hinders it from yielding to the force of the urine, so that little or none can pass. It will be unnecessary to relate the particular symptoms which this disease occasions; they are such as arise from any stoppage of urine, producing an irritable bladder.

When a difficulty in making water takes place, a bougie is the instrument which the surgeon will naturally have recourse to, and if he finds the passage clear, which he often will, in such cases he may very probably suspect a stone. If search is made, and no stone felt, he should naturally suspect the prostate gland, especially if the sound or instrument used meets with a full stop, or passes with some difficulty just at the neck of the bladder. He should examine the gland. This can only be done by introducing the finger into the anus, first oiling it well, placing the forepart of the finger towards the pubes; and if the parts, as far as the end of the finger can reach, are hard, making an eminence backwards into the rectum, so that the finger is obliged to be removed from side to side, to feel the whole extent of such a swelling, and it also appears to go beyond the reach of the finger, we may be certain the gland is considerably swelled, and is the principal cause of those symptoms.

I have known cases where the common catheter has been pushed through the projecting part of the gland into the bladder, and the water

then drawn off; but in one patient the blood from the wound passed into the bladder and increased the quantity of matter in it. The use of the catheter was attempted a second time, but, not succeeding, I was sent for. I passed the catheter till it came to the stop, and then suspecting that this part of the prostate projected forwards, I introduced my finger into the anus, and found the gland very much enlarged. By depressing the handle of the catheter, which of course raised the point, it passed over the projection; but, unfortunately, the blood had coagulated in the bladder, which filled up the holes in the catheter, so that I was obliged to withdraw it, and clear it repeatedly. This I practised several days; but suspecting that the coagulum must in the end kill, I proposed cutting him as if for the stone; but he died before it could be conveniently done, and the dissection, after death, explained the case to be what I have now described.

In some of those cases where this part of the gland swells into the bladder in form of a tumor, the catheter has been known not to bring off the water at times when it appeared to have passed; and upon the death of the patient, when the parts have been examined, it was imagined that the catheter, in the living body, had made its way into the tumor so as to have been buried in it at those times.¹

From the knowledge of the above-mentioned facts, whenever I find the urine does not flow immediately upon introducing the catheter into the bladder, I have pushed it on and depressed the handle, so as to reach the fundus of the bladder with the end of the catheter, and have always succeeded. For the more ready introduction of the instrument, a catheter made flexible at the point only for about an inch, is perhaps best, as it is more under the command of the hand than when wholly flexible.

If the bougie be used, it should be first warmed, and then very much bent at the point, and allowed to cool in this position, and passed quickly with the concave side upwards, before it loses the bend in its passage. But the bougie does not answer so well as the catheter, because, upon withdrawing the bougie the sides of the gland soon close again. I have known where the water has passed by the side of the bougie with more freedom than when it was pulled out, because the bougie gave a straightness to this part of the canal, which it had not when the bougie was withdrawn. The following case is a strong instance of the inconveniences arising from such a disease of the prostate gland.

A gentleman was attacked with a suppression of urine; a catheter could not be passed; but a bougie relieved him. He continued well for five years; but the same complaint returning, the bougie could not be passed, and the disease was supposed to be a stricture. A catheter, however, passed, although with a good deal of difficulty, and the bougie, though often tried, could not be passed, excepting once, just after using the catheter. I was sent for, and tried the bougie with as little success, and was obliged to have recourse to the catheter. I passed it with great ease, and the water was drawn off. The late Mr. Tomkyns, who had Daran's bougie, was called; but he was not more successful, and was obliged to have recourse to the catheter; but such violence was

¹ *Vide* Plate VII.

used as caused a good deal of blood to come from the urethra, and after all it did not succeed. I was again consulted, and passed the catheter, but with much more difficulty than before, which made me believe that the passage had been a good deal torn. Upon taking out the catheter, I passed a large bougie into the bladder with great ease; this I allowed to remain for three days, and the patient made water tolerably freely by the side of it. The moment I drew out the bougie I attempted to pass another, but did not succeed, although I gave it the natural bend of the passage. Upon withdrawing those bougies that did not pass, I observed that all of them had a bend at the point, contrary to the direction of the passage; this made me suspect that the place which stopped the bougie was on the posterior surface, and that, by being pushed on, it bent forwards into the passage, and of course the point turned back. I therefore took a thick bougie, and before I introduced it I bent the point almost double, so that it could not catch at the posterior surface of the urethra, where I supposed the stop to be; this point of the bougie rubbed all along the anterior and upper surface of the urethra, by which means it avoided catching on the posterior surface, and it passed with great ease into the bladder. He made water by the side of the bougie, as before. He had been for some time troubled with fits of an intermittent, which at first were very irregular, but became afterwards more regular. In one of the cold fits, the bougie, being in the urethra, gave him great pain, and obliged him at last to pull it out, on which he had immediate ease. The sensation was as if it stretched the passage too much, and it seemed to come out with difficulty. This looks as if there was a contraction of the urethra, as well as of the vessels of the skin, in the cold fit; so that this disposition runs deep. By giving the bougie this bend he was able for the future to pass them with great ease. I may just observe that, by introducing the finger into the anus, I found the prostate gland much enlarged.

Many patients, while laboring under any of the before-mentioned diseases of the urethra, and sometimes even after they had been cured of them, find great pain in throwing forwards the semen, having a sensation as if it scalded. This arises from the very irritable state which the muscles of this part are in, giving great pain by their own action.

[RICORD.—Since the time of Sir Everard Home, to whose work Mr. Babington does right in referring for all that relates to diseases of the prostate, anatomists have disagreed on the conformation of this glandular body, and particularly on the inferior portion of it, which Home considers as forming a middle lobe. But however it may be with this portion, whether its apparent separation is only due to the furrow hollowed out by the ejaculatory ducts, or whether it is really distinct, as some facts in comparative anatomy or some arrests of development would seem to show, it is important, as Hunter observes, to be aware of the pathological states which may be confined to it alone. On the other hand, I will recall a remark made by Sir E. Home, which I have had an opportunity to verify, viz.: that the left side, or, if you will, the left lobe of the prostate, is more frequently affected with hypertrophy or morbid alterations than the right; a fact important to be

known, so as to give the requisite curve to instruments in catheterization.

I will add, that in cases of disease of this organ, or in operations to be performed around or within it, we cannot too well bear in mind both the pathological changes to which it is liable, and also some anatomical varieties, which have lately been better described than formerly. The prostate may be wanting, or else be very small, whilst sometimes it is seen to acquire a large development, without morbid alteration. In some subjects it does not completely envelop the urethra and the neck of the bladder, and then the part which is wanting beneath is replaced by muscular fibres, according to M. Amussat. M. Senn has described another anomaly in which the superior portion of the prostate is thicker than the inferior, so that the urethra and the neck of the bladder are situated much nearer the rectum than in the normal state. Lisfranc had two beautiful anatomical specimens belonging to this variety, which he often showed in his operative courses. However, for the anatomy and pathology of the prostate, I think I cannot do better than to refer to the work on this subject published by M. Mercier.¹—RICORD.]

§ 1. *Of the Treatment of the Swelled Prostate Gland.*

The methods practised in the above cases afforded only temporary relief, yet such must be had recourse to in order to prevent the consequences of retaining the urine too long. As a temporary relief from pain, as also to remove spasm, opiate clysters should be thrown up once or twice a day. A certain cure, I am afraid, is not as yet discovered.

I have seen hemlock of service in several cases. It was given upon a supposition of a scrofulous habit. On the same principle, I have recommended sea-bathing, and have seen considerable advantages from it, and, in two cases, a cure of some standing.

In one case in which I was consulted, the surgeon had found that burnt sponge had reduced the swelling of the gland very considerably.

This disease, like the stricture, produces complaints in the bladder; but in this the bladder is generally more irritable, perhaps from the cause being nearer to that viscus.

Diseases of the vesiculæ seminales are very familiarly talked of; but I never saw one. In cases of very considerable induration of the prostate gland and bladder, where the surrounding parts have become very much affected, I have seen these bags also involved in the general disease; but I never saw a case where it appeared that they were primarily affected.

In a case of a swelled prostate gland, with symptoms of an irritable bladder, in a young gentleman about twenty years of age, Mr. Earle tried a blister to the perineum; but not finding the desired effect, and conceiving a greater irritation and discharge to be necessary, he passed a seton in the direction of the perineum. The orifices were about two inches distant from each other. The symptoms of irritability in the

¹ See the valuable work of Mr. Henry Thompson, entitled: *The Enlarged Prostate, its Pathology and Treatment*; London, 1858.—Ed.

bladder began to abate, and in time went entirely off. Upon examination of the prostate gland, from time to time, it was found to decrease gradually till it was nearly of the natural size. The seton was continued some months, and upon its being withdrawn the symptoms began to return. It was advised to introduce it again, which was accordingly done, but without the former good effects.

[G. G. B.—The enlargement of the prostate gland, as it occurs in old people, seldom, if ever, yields to surgical treatment; yet much may be done to prevent or alleviate the distressing effects which it produces on the neighboring organs. In fact, it is these effects only which give any importance to the malady. The disease of the prostate in most cases occasions no symptoms which are referable to the gland itself. But it may impede the flow of the urine, or excite chronic inflammation of the bladder, and ultimately disease of the kidneys, or give rise to painful irritability of the rectum. The mode in which these consequences are produced, and the treatment by which they are to be obviated, are best detailed in the observations of Sir E. Home, on diseases of the prostate gland, to which work the reader is referred.]

[RICORD.—Lesions of the vesiculæ seminales are perhaps more common than is supposed. These sacs are always more or less affected, in what I call successive epididymitis, that is to say, epididymitis in which the spermatic passages are involved from the urethra to the epididymis. Among the cases reported of their pathological anatomy, I will recall those presented by M. Gaussail, and those which I myself showed to the Academy of Medicine. It results from my observations that the vesiculæ seminales are susceptible of the most varied morbid changes, from simple inflammation and suppuration to different degenerations, one of the most common of which is tubercular degeneration. The tubercles are either developed alone in these organs, or they are also found at the same time in other regions, and more particularly in connection with scrofulous sarcocele. A fine instance, taken from the wards of my learned colleague, M. Cullerier, was published in the *Bulletin de la Société Anatomique*, and I have shown several similar cases at my clinique.

I will here quote the summary of an interesting essay on obliterations of the spermatic passages, which M. Gosselin, chief anatomist of the medical faculty of Paris, read to the Academy of Medicine, June 29, 1847.

1. The vas deferens may be obliterated, and cease to convey the semen to the vesicula seminalis.

2. The canal of the epididymis may be obliterated at a point corresponding to the cauda of this organ; and in this case also the passage of the semen into the vesicula is prevented.

3. In these two cases, the canal forming the epididymis may become dilated and varicose, or preserve its normal state.

4. The testicle, in these cases, does not invariably become atrophied; it continues to secrete semen, and its swollen vessels are unloaded by absorption.

5. Obliterations of the epididymis, at the point where the cauda is given off, are sometimes incomplete or temporary.
 6. Obliterations may take place in the head of the epididymis, but they do not obstruct the flow of the semen.
 7. The seminiferous vessels of the testicle may become wholly or partially obliterated.—RICORD.]
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CHAPTER IX.

OF THE DISEASES OF THE BLADDER, PARTICULARLY FROM THE BEFORE-MENTIONED OBSTRUCTIONS TO THE URINE.

ALL the diseases of the urethra, as also the diseases of the prostate gland, I have now treated of, and shall next consider the effects of them upon the bladder, as also the diseases of that viscus, independent of affections of the urethra.

The disease of the bladder arising from obstruction alone is increased irritability and its consequences, by which the bladder admits of little distension, becomes quick in its action, and thick and strong in its coats. But prior to the description of the effects of the diseases of the urethra on the bladder, it will be necessary, for the better understanding of the whole, to make some remarks upon those diseases of the two parts, in which we find that each affects the other; and these I shall consider without having any regard to the cause, but only to the general effects, when they are diseased. It may be observed that every organ in an animal body is made up of different parts, the functions or actions of which are totally different from each other, although all tend to produce one ultimate effect. In most, if not in all, when perfect, there is a succession of motions, one naturally arising out of the other, which in the end produces the ultimate effect; and an irregularity alone in these actions will constitute disease, at least produce very disagreeable effects, and often totally frustrate the final intentions of the organs.

I may be allowed also to premise that the natural width of the urethra gives such a resistance to the force or power of the bladder in expelling the urine as is easily overcome by the natural action of the bladder; but when the canal is lessened, either by stricture, spasm, swelled prostate gland, or any other means, this proportion is lost, by which means the bladder finds greater difficulty than natural, and is of course thrown into an increased action to overcome the resistance, which becomes a cause of the irritability and increased strength of this viscus in such diseases.

It is to be understood that in a sound state of these two parts, the bladder and urethra, the contraction of the one produces a relaxation of the other, and *vice versa*; so that their natural actions are alternate, and they may be considered as antagonist muscles to one another.

Thus, when the stimulus of expulsion of the urine takes place in the bladder, which immediately produces contraction in it, the urethra relaxes, by which means the urine is expelled from the bladder, and allowed to pass through the urethra; and when the action ceases in the bladder, the urethra contracts again, like a sphincter muscle,¹ for the purpose of retaining the urine which flows into the bladder from the kidneys, till it gives the stimulus for expulsion again. But in many diseases of these two parts, this necessary alternate action is not regularly kept up, the one not obeying the summons of the other. This irregularity arises, perhaps, oftener from disease in the urethra than in the bladder, for the action of the urethra depends upon the actions of the bladder; and if it is not disposed to obey the notices of the bladder, then there must be an irregularity as to time, which produces very troublesome symptoms.

We find, in many diseases of the urethra, such as strictures and spasms, as also in diseases of certain parts belonging to this canal, such as the prostate and Cowper's glands, that there is a greater disposition in this canal for contraction than common, so that when the bladder has begun to act, the water is not allowed to flow, the urethra not immediately relaxing; and the moment such a symptom takes place, every other power takes the alarm, and is brought in to assist the bladder, such as straining violently with the abdominal muscles, and muscles of respiration, from all which there is violent pain in the parts immediately concerned, especially in the glans penis.²

This disease has different degrees of violence. When slight, the distance in time between the contraction of the bladder and the relaxation of the urethra is but short, only giving a momentary pain and straining before the urethra relaxes, and the water flows according to the dilatation of the urethra, which, in many of these cases, is but very small. In others, the distance of time is very long, many straining for a considerable time before a drop will come; and what does come is often only in drops; and sometimes, before the whole urine can be expelled in this way, the spasm of the urethra comes on again, and there is a full stop, which gives excruciating pain for a while; but at last, the bladder is, as it were, tired, and ceases to act. But, as the urine in such cases is seldom all discharged, and often but a very little of it, the symptoms soon recur; and in this way, with a call to make water perhaps every hour out of the four and twenty, the patient drags on a miserable life.

The bladder, in all cases of obstruction, whether constant, as in the permanent strictures or swelled prostate gland, or only temporary, as in the spasmodic stricture, is generally kept distended, but much more

¹ It may be remarked that many sphincter muscles have two causes of action; one which may be called involuntary, depending on the natural uses and actions of the parts; the other is voluntary, where a greater degree of action can be produced by the command of the will; and when a diseased action takes place, it is probably of this voluntary action, for it is an increased action over the natural, which the voluntary is.

² Added: "A gentleman, whose bladder was in an irritable state, found that by passing a bougie a little way into the urethra the irritation was taken off from the bladder, and he could retain the urine several hours."—HOME.

so in the permanent stricture; and when the irritation of fulness comes on, which is very frequent, the contraction of that viscus becomes violent in proportion to the resistance; the sympathetic contraction of the muscles of the abdomen takes place, and is also violent; yet the water, at such times, shall only dribble, and be discharged in small quantity; and in the spasmodic stricture, often not a drop shall pass, so that the bladder is never entirely empty; and what does pass is no more than what is sufficient to take off the irritation of fulness, by which means these actions become more frequent, and consequently there is almost always a constant oozing of urine from the penis between the times of making water. This, however, is not always the case, for the bladder sometimes is so irritable as not to cease acting till it has evacuated the whole water; and even then it is not at ease, but still strains, though there is nothing to throw out, the action of the bladder becoming a cause of its own continuance.

In all such affections of the bladder, there is a sensation of pain and itching combined in the glans penis.¹

If the symptoms are more urgent than what can be accounted for upon the supposition of a stricture or disease of the prostate gland, a stone is to be suspected.

§ 1. *Of the Treatment where the Actions of the Urethra and Bladder do not exactly alternate.*

The cure, where the disease arises from spasm alone, consists in removing the disposition to over-action in the urethra, and the irritable disposition of the bladder when the urethra does not obey it. Perhaps opiate clysters, as a temporary means of relief, are the very best medicines that can be administered. I have known a blister to the loins, or to the perineum, remove the spasm, in a great measure, from the urethra.

When the circumstance of the ultimate actions of these parts not being regular arises from stricture, swelled prostate gland, or any mechanical obstruction to the urine, then that cause must be removed, as has been fully described in the treatment of these diseases.

§ 2. *Of the Paralysis of the Bladder from Obstruction to the Passage of the Urine.*

We may observe that the bladder is a part easily deprived of its power of contraction; for we find in many debilitating diseases and long illnesses from any cause, as fever, gout, and considerable local diseases which debilitate, that the bladder often becomes paralytic, and the water must be drawn off. We may also observe, when the bladder has been distended considerably, from whatever cause, so as to have its contractile power destroyed, that there is a considerable extravasa-

¹ Added: "In diseases of the bladder, the constitution is sooner affected by symptoms of dissolution than from the same apparent degree of disease in other parts; the patient becomes drowsy, insensible, and soon dies."—HOME.

tion of blood from the inner surface of the bladder, so that the water which is evacuated is often extremely bloody. I have seen, in cases where the patient has died with this obstruction upon him, that the inner membrane of the bladder has been almost black, being loaded with extravasated blood; but this symptom of bloody urine goes off, as the bladder acquires again its power of contraction.

In the diseases of the urethra, before described, when not properly or in time attended to, and in cases of stricture, where Nature has not been able to relieve herself, the water must of course be retained in the bladder, which is perhaps always productive of another disease, that is, the loss of the power of contraction of that viscus. Although this one effect, the retention of urine, arises from very different causes, as before related, yet immediate relief must be given in all of them, which can only be effected by the evacuation of water. According to the nature of the obstruction, the mode of the evacuation will be different, and will be of two kinds—one by the natural passage by means of a hollow tube, the other by an artificial opening made into the bladder.

If the causes of suppression are either spasmodic affections of the urethra, a swelled prostate gland, inflammation in the surrounding parts of the urethra, or tumors pressing upon it, as happens in pregnant women, immediate relief may be procured by means of a catheter, because under such circumstances a catheter will most probably pass, the sides of the canal being merely forced together by spasm or external pressure.

A bougie, although it will also pass under such circumstances, will not answer so well, because a bougie must be withdrawn before the water can flow, which will allow the cause of the obstruction to exert again its full force; and if the spasm should not now exist, yet the bougie will not answer, unless there be a power of action in the bladder; for it is with difficulty that the urine can be made to pass through the urethra by pressing the abdomen only.

When the catheter is passed, it will be necessary to make the patient strain with his abdominal muscles, as also with his muscles of respiration, to squeeze out the water, the bladder having no power of contraction; and even this will not be sufficient, for it will be necessary to press on the region of the pubes with the hand to make the water flow.

In cases where there is a considerable degree of debility in the bladder, or in those cases where there is a considerable strangury, and of long standing, and where a small quantity of urine in the bladder gives the stimulus of fulness to that viscus, which is always attended with considerable urgency to make water, and where only very small quantities are evacuated, the bladder not being emptied at each time of making it, and when a catheter, either rigid or flexible, can with readiness be passed, the question is—What is the best way upon the whole to evacuate the water? There are three ways in which it can be done; one, by allowing the parts to do their own business as much as they can, and this, at first sight, might be supposed to be the very best; but it is in some cases the very worst; for the frequency of the

inclination to make water, arising from the water not being wholly evacuated each time, the evacuation not readily taking place, increases the effort, and for a few minutes produces excruciating pain, keeping up a considerable and almost constant irritation in all those parts, which few can bear. Another method is, to draw off the water each time with a catheter, but this, in many cases, is next to impracticable; for, supposing the operation to be performed only twice or three times in the day, we shall find that this is oftener than what should be done. The third method is, to leave the catheter almost constantly in the bladder.

Which of these three methods is likely to give, on the whole, the least irritation must depend upon circumstances attending different cases. Where frequency and the urgency is great, and the flowing of the water difficult, either the second or the third is to be pursued; and when the symptoms are such that a catheter must be passed very often, I believe it had better be left in, only taking it out occasionally. I think this is supported by observation and experience.

It sometimes happens, in cases of swelled prostate gland, that the catheter cannot be passed without the utmost difficulty, and when this has been the case I have left it in the bladder for fear of not being able to pass it again, and continued it there till the bladder has sufficiently recovered its tone, which is known by its being able to throw the urine through the catheter; after which that instrument may be withdrawn.

If the spasm, in such cases as arise from that cause, should still continue after the bladder has recovered its tone, we must continue the use of the catheter. But it often happens that the spasm leaves the urethra before the bladder recovers its power of contraction, the disease becoming then simply a paralysis of that viscus.

One of the first symptoms of the bladder beginning to regain its power of contraction is the sensation of fullness, or an inclination to make water, and when that sensation comes on the patient should be allowed to make water, but not to force it, for that circumstance alone will bring on the spasm if the urethra is not very ready to dilate. I have seen, however, in some cases, that a slight sensation is not altogether to be depended upon, for it required a little retention more effectually to stimulate the bladder to action, and then the water has passed more freely.

The spasmodic contraction of the urethra does not appear to give up its action simply upon the stimulus or inclination to make water, nor till the bladder begins to have the power of contraction; for in cases where the bladder is paralytic, and yet sensible of the stimulus arising from being full, as it does not contract, the urethra does not relax, and the water cannot be made to pass.

It would appear that, as the bladder recovers of the paralysis, it is not able to contain so much water as usual. Therefore, the patients are obliged to make water often, and of course in small quantities.

§ 3. *Of the Cure of the Paralysis of the Bladder, from Obstruction arising from Pressure or Spasm.*

The removal of the causes of the paralysis of the bladder was fully described when we were treating of the diseases which produce that complaint, and the immediate relief, when the bladder is rendered inactive, has just now been considered; the paralysis itself is therefore the only remaining thing to be attended to. In this disease there are often contrary indications of cure, for a spasm is very different from a paralysis; and if the suppression is from spasm, and that still continues, then what may be good for the paralysis, may be bad for the spasm. As in such cases the water can be drawn off, the bladder should be first attended to. Stimulants and strengtheners are useful; blisters to the loins to rouse the bladder to action, and blisters to the perineum, to take off the spasm from the urethra, often succeed. Electricity is sometimes of singular service, when applied in such cases to the perineum. Through the whole of the cure the urine must be drawn off frequently, because the bladder should not be allowed to be distended, which otherwise would be the consequence; and the sensation arising from the distension of that viscus is a very oppressive one.

A gentleman was at times attacked with a difficulty in making water, which he paid no attention to, as it had always gone off; but at last he was obliged to have recourse to the catheter, which afforded only a temporary relief. The spasm continued, and I was sent for. When I passed the catheter, I was obliged to press the lower part of the abdomen, to squeeze out the water, for the bladder appeared to give but little assistance. I ordered a blister to the loins, which gave some power of contraction to the bladder, and took off some of the spasm in the urethra, but still he was very little relieved. I then directed a blister to be applied to the perineum, which immediately removed his complaint.

[RECORD.—I have often succeeded, in cases of inertia of the bladder, with injections of cold water or aromatic infusions; and have sometimes obtained favorable results from cauterizing the neck of this organ. But, in some cases, I have only succeeded in restoring its contractility, by leaving an open catheter in its cavity for some time. The latter method is often advantageous when the bladder has lost its elasticity in consequence of long distension; we thus prevent the urine from accumulating in the viscus, which collapses for the time being, and soon reacts when the instrument is withdrawn, and a quantity of fluid, to which it is no longer accustomed, stimulates it anew.

In many cases of retention of urine, where there is no stricture of the urethra and no swelling of the prostate—cases which are attributed to inertia or essential paralysis of the bladder, so called—M. Mercier has shown, by means of his explorer, that there exists a peculiar prominence of the vesico-urethral or pyloric valve.

When this prominence is due only to spasmodic contraction of the muscular fibres surrounding the neck of the bladder, which are excited by inflammation of the prostatic region of the urethra, cauterization

of the neck of the bladder, among other means, may give favorable results. But in cases where the pyloric prominence is produced by a permanent contraction of these fibres, which finally undergo various degrees of fibrous degeneration, consequent on deeper and longer-continued inflammation, we should have recourse to section.—RICORD.]

CHAPTER X.

OF A SUPPRESSION OF URINE, AND OPERATIONS FOR THE CURE OF IT.

IN cases of total suppression of urine arising from strictures, or other causes where a catheter cannot be passed, and where every other method recommended is impracticable, an artificial opening must be made into the bladder for the evacuation of the water. There are three places where this opening may be made, and each has had its advocates. This operation has not been considered in all its circumstances in different patients, so as to direct the young surgeon in the variety of cases that may occur; for under some circumstances the operation is more advisable in one place than another; and, indeed, it may sometimes be next to impossible to perform it in a particular part.

The opening may be made first in the perineum, where we now cut for a stone; secondly, above the pubes, where cutting for the stone was formerly practised; and thirdly, from within the rectum, where the bladder lies in contact with the gut.

The first question which naturally occurs is, which of those situations is the most proper for the safety of the patient, the evacuation of the water, and the conveniency of operating, when no particular circumstance forbids either of the situations?

On the first view of the subject, one would be apt to prefer that above the pubes, or from the rectum, as the bladder is nearer to either, and the parts more adapted to an operation than from the perineum, where we must cut at random. These two situations, although the most proper in this respect, under certain circumstances, yet may become the most improper, for they are subject to greater changes than the perineum.

The reasons that may render it very improper above the pubes are, the persons being very fat, or the bladders not distending sufficiently so as to rise above the pubes, which is common enough in diseases of those parts.

In very fat people, it will be found that the substance to be cut through may be three or four inches, which will not only make the operation very unpleasant, but often improper; for such thickness of parts will make the swell of the bladder very obscure and uncertain; in many, the bladder is so diseased as to allow of but little distension, and in such the symptoms of fulness come on very early, perhaps when

there are only a few ounces of water collected. But if the retention has been for some considerable time, as twenty-four hours, then we may suppose that the bladder has allowed of distension to a much greater degree, which may in some cases be ascertained by introducing the finger into the rectum.

But where the bladder distends, and the parts are so thin that it can be plainly felt above the pubes, I see no material objection to this situation; and it has this advantage over the operation by the rectum, that a catheter can more easily be introduced, and kept in, which will be necessary to be done till the cause is removed.

It may be necessary here to mention some precautions respecting the keeping the instrument in the bladder; as also the best kind to be used. It must be a hollow tube, and should reach as far as the posterior surface of the bladder, for, upon the contraction of that viscus, its anterior part recedes backwards and downwards from the abdomen towards its fixed point, which may draw the bladder off from the tube. But as the distance between the skin of the abdomen and posterior surface of the bladder cannot be exactly ascertained, the canula may be either too long or too short; if too long, its end may press upon the posterior surface of the bladder and produce ulceration there, and in time work its way into the rectum. To avoid this mischief, as also the inconveniences arising from its being too short, and the bladder slipping off from its end, I would recommend the tube to be made with a curve, and to lie with its convex side on the posterior part of the bladder, which, being a large surface, and following nearly the same curve as the canula, less mischief is to be expected. The openings into the canula may be made on the concave side.

It would probably be both safer and easier for the patient to have the curved end of the catheter introduced into the urethra from the bladder. The passing of it into the urethra is very practicable; and we know that such a body lying in the urethra is not productive of any mischief. A common catheter passed in this way enters so far as to bring the handle almost flat to the belly; at most only a little bolster between the catheter and belly is necessary, and then with a piece of tape fixed to the handle of the catheter it might be fastened to the body; or a short catheter might be made with ears to fix the tape to.¹ In cases where the canula has remained in the urethra some time, the artificial passage will become in some degree permanent, so that it may be taken out occasionally, and cleaned from any stony matter that may be attached to it. To avoid this part of the operation it has been recommended to have two canulas, one within the other, that by drawing out the inner it may be cleaned, and again introduced; but in most cases it will also be necessary to withdraw the outer one, as its external surface will contract a crust.

¹ Where this operation is performed in consequence of a stricture, I have conceived that, by passing a catheter into the urethra from the bladder till it comes to the stricture, and then passing another straight canula from the glans down the urethra, the two may nearly meet, only having the stricture between them; and a piercer may be passed down and forced into the end of the one from the bladder, and afterwards either a bougie or hollow catheter introduced.

The second method, or puncture by the anus, will more commonly admit of being performed than that above the pubes; for it does not require that distension of the bladder which the other does, and is therefore not so often impracticable from that cause; and perhaps the only obstacle here is a swelled prostate gland. In many of these cases of diseases of the urethra, the prostate gland is very much swelled, which I can conceive may make the proper place for the puncture very uncertain; for the prostate gland, in such cases, will be pressed down towards the anus, before the bladder, and will be the first thing felt by the finger. Care must therefore be taken to distinguish the one from the other, which can only be done by getting the finger beyond the prostate gland, which may not be practicable; and, if practicable, it may not be an easy matter to distinguish the one from the other, as a thickened and distended bladder may seem to be a continuation of the same tumor. However, if the objections given to the performing it above the pubes exist, I should prefer operating by the rectum; for although the probability of succeeding here may not be apparently greater than above the pubes, yet the chances are in its favor.

I must, however, observe here that the objections which I have started, are only raised in my own mind from my knowledge of the diseases of those parts, and not from cases of suppression of urine under all the before-mentioned circumstances having occurred to me in practice.

A case of total suppression of urine arising from stricture, where no instrument could be passed by the natural passage, and where a puncture was made into the bladder, from the rectum, with success, is related in the *Philosophical Transactions*, by Dr. Hamilton, of Kings-Lynn in Norfolk.¹

What led Dr. Hamilton to do it here was a difficulty which was found in passing the clyster-pipe into the rectum, which induced him to introduce his finger into the anus, and he found the bladder so prominent in the rectum as to give the hint of performing the operation there.

The man was put into the same position as in the operation for the stone, and a trocar was introduced upon the finger into the anus, and thrust into the lower and most prominent part of the tumor, in the direction of the axis of the bladder, and upon withdrawing the piercer the water flowed out through the canula.

A straight catheter was then introduced through the canula, lest the orifice in the bladder should be drawn off from the canula.

Then the canula was pulled out over the catheter, which was left in till the whole water was evacuated, and was then withdrawn.

The bladder, notwithstanding this perforation, retained the water as usual, till the inclination to make it came on; and when he performed the action of making water, the orifice in the bladder seemed to open, and it rushed out by the anus. This continued about two days, when the water began to find its natural passage, and a bougie was introduced

¹ *Philosophical Transactions* for the year 1776, vol. lxxvi. p. 578.

into the bladder, through the urethra, which gave a free passage for the water, and of course less came by the anus; so that on the sixth day after the operation the whole came by the natural passage. The man continued the use of the bougie till the stricture was dilated. Dr. Hamilton farther remarks that, in those cases of suppression of urine, in general, he has found that calomel and opium, in large doses, answer better than anything he has tried. He is convinced, from repeated trials, that the specific efficacy is in the calomel, as large doses of opium alone have proved ineffectual; but he does not say that calomel alone will answer. He orders ten grains of calomel with two of opium, to be repeated in six hours if it has not answered in that time; and he says he has seldom been obliged to give a third dose.

This method of tapping the bladder was first suggested by Mons. Fleurant, surgeon to the Charité, at Lyons, in the year 1750. The operation was performed at that time, and an account of it was afterwards published by Mons. Pouteau, in 1760, with the history of three cases, in all which the operation was performed by Mons. Fleurant. The propriety of performing the operation in this part occurred to him in a manner similar to that before related of Dr. Hamilton; for in introducing the finger into the rectum to examine the state of the bladder in a case where he was going to puncture in the perineum, he found the bladder so prominent there, and so much within the reach of his instrument, that he immediately altered his intention, and performed it in this part. He very readily drew off the water, and kept the canula in, with a T bandage, till the urine came the right way, and then withdrew it, and all terminated well. But there was a good deal of trouble on account of the canula being left in on going to stool, as also from the constant dribbling of the water through it; all of which was prevented in Dr. Hamilton's case, by removing the canula immediately upon the evacuation of the water. This was productive of another good effect, which was the retention of the urine till the stimulus of fulness was given, and then it passed through the artificial as it would through a natural passage. Should this be a constant effect in consequence of performing the operation here, I think it must be owned to be an unexpected circumstance which at first could not have been imagined.¹

In another patient of Mons. Fleurant's, the canula was kept in the anus and bladder thirty-nine days without any inconveniency; so that the objection to this part of the operation cannot be material. Pouteau mentions one case where he performed this operation, in the year 1752, and the man died.² He says: "I was called to visit a poor man suffering under a retention of urine, so obstinate and violent that it had already the symptoms of what is called a reflux of urine into the blood; and the complaint had continued more than three days. An empiric, to whose care he had been intrusted, after having very improperly given him the most powerful diuretics, had likewise the rashness to search him. It appears probable that these attempts, which were made with-

¹ A history, with a description of this operation, was published by Mr. Reid, surgeon, of Chelsea, in 1778.

² Pouteau, *Mélanges de Chirurgie*, printed at Lyons, 1760, pp. 506-508.

out success, must have increased the mischief. A catheter could not be passed into such parts by unskilful hands without increasing the inflammation. I only made three slight efforts to effect a passage into the bladder by the urethra, which appeared to be much diseased, as well by the effusion of blood as the extreme pain which these attempts produced. I determined at once to do as before, and plunged my trocar by the rectum into the bladder. The success was exactly the same; the bladder was entirely emptied, and I allowed the canula to remain there a whole night and a day, during which time the urine flowed without intermission. Everything went on without any accident which could be supposed connected with the operation; and death, which happened next day, was entirely independent of it."

One must suppose, with Pouteau, that the death of the patient could not having arisen from this operation, but from the preceding diseases.

The bags called *vesiculæ seminales*, and the hemorrhoidal vessels, have been mentioned as parts in danger of being wounded in the operation, and thereby proving troublesome; but if either of them are wounded, no inconvenience can arise. To avoid the *vesiculæ seminales*, it is recommended to perforate high up, and directly in the middle of the bladder, between the two sides; and this situation is, at the same time, the one where the hemorrhoidal vessels are the smallest, and therefore it is of less consequence if they are wounded.

It must appear from the following case, sent me by a gentleman, that a communication being kept up between the bladder and rectum is only inconvenient, and not so much so as might be expected:—

"With respect to the sailor who passed his urine by the rectum, I have examined the few papers by me, but cannot find the particular remarks I made; however, as the case was singular, I recollect the man told me that, a few years before (this was at Madras Hospital, in December, 1779), he had the venereal disease, very bad and very long; that the urine came by the anus, but this passage healed up, and it came by the penis, and continued to do so till he caught the disease again, when the urine found its way a second time by the anus, and came that way for years. When he first came under my care, in the hospital at Bombay, February, 1779, he felt no uneasiness or inconvenience from this manner of passing his urine; whenever he had an inclination to make water he sat down. I often made him lie upon his breast, with his legs drawn up, and the stream came through the anus with great force."¹

¹ Added: "John Conway, a seaman belonging to St. Antonio, was admitted into Haslar Hospital on the 24th November, 1770, for the lues venerea. Besides the usual symptoms of that disease, he had a communication between the bladder and rectum, which had continued four months. When he endeavored to make water, the water flowed both from the urethra and anus, coming from the anus in a small stream, often to the quantity of a pint. It also flowed freely from the anus when he went to stool, although none was voided by the urethra. In the beginning of the complaint, some portions of dead flesh, he said, had come away from the rectum, but when admitted into the hospital there was not any soreness remaining, or discharge of matter from it, and the urine passed without pain; externally, he never had any fistula penetrating either into the bladder or rectum, and when disturbed with flatulence in the bowels, did not perceive any wind to escape from the urethra."—HOME.

In other cases, in consequence of abscesses forming between the bladder and rectum, where they have not healed up, there has been a reciprocal passing of the contents of these cavities from the one to the other.

It only remains to speak of the puncture in the perineum. An obstruction to the urine taking place in the natural passage prevents us from introducing an instrument in most of those cases, and deprives us of all the advantages we could receive from it as a guide in the operation; yet there may be cases of stricture where, by cutting into the urethra beyond the stricture, the water will flow; but this must be done without any guide or direction, and requires a nice and accurate knowledge of the parts. Or if the obstruction arises from the valvular projection of the prostate gland, a staff may be passed as far as this projection, and cut upon as for the stone, the surgeon only making a similar incision, using a small gorget; or, in the room of that, a trocar of a particular form might be run along it into the bladder; for, although the staff does not enter the bladder, yet the distance to pass through without this guide is but small. If this cannot be done, a small and deep incision may be made in the perineum with an imposthume lancet towards the bladder; the point of the trocar is to be introduced by this, the surgeon passing at the same time the forefinger of the other hand into the anus, which will be a guide both for the direction of the instrument, as also to avoid its point passing into the rectum. With these precautions, the error cannot be great.

I must own, however, that I have not seen cases enough to enable me to give all the varieties that commonly happen, and of course to give all the advantages and disadvantages of each method.

[G. G. B.—In cases of retention of urine from stricture, it is always more safe to open the urethra than to puncture the bladder. The bladder is imbedded in loose cellular membrane, which envelops it everywhere, and which must be wounded if the bladder is punctured, whatever part be chosen for that operation. Now, such a wound cannot be made without great danger, because the urine is thus admitted into this loose cellular texture, and frequently diffuses itself through it, producing extensive sloughing and abscess. This is by no means a rare consequence of puncture of the bladder, and when it occurs, is very generally fatal. The opening of the urethra is not attended with the same risk, because the cellular membrane of the perineum is generally loaded with fat, and the escape of the urine is in all cases direct and easy; and even if abscess should take place, it will be near the surface, and can be laid open with the greatest facility.

Under ordinary circumstances, the urethra is collapsed, and is not easily found, unless some instrument is previously introduced as a guide; but in cases of retention of urine from stricture, it is always greatly dilated between the contracted part and the bladder, and there is not the same difficulty. As there is variety in the seat of stricture, there will be some variety also in the operation which is required.

When the obstruction is situated before the bulb, the distension of the urethra behind it may be distinctly felt in the perineum, especially when the patient is straining to pass water. Under such circumstances,

nothing is easier than to open the dilated part of the passage with a common lancet.

But the stricture is much more frequently seated at the part where the membranous portion of the canal enters the bulb. In this case the difficulty is greater. Nevertheless, the dilated part of the urethra may generally be felt through the rectum, and more or less distinctly in the perineum; and if a previous incision be made, as in lithotomy, through the superficial parts, it may be reached and laid open. The operator may derive some assistance from the introduction of a sound into the urethra as far as the stricture, which will point out the direction of the canal; but his principal guide must be the position of the pubes, since in this case the part which is to be punctured will lie immediately below the symphysis.

When the contraction is still farther back, so as to be near the apex of the prostate gland, it may be impossible to feel any dilatation; and in this case the operation must be varied. A staff should be first introduced into the urethra, and passed down to the stricture. The groove of the staff should then be laid open for a small extent near its point, and this will enable the operator to introduce a probe, which may be passed on to the stricture, and, without much trouble, made to penetrate it. When that has been effected, it will not be difficult to pass a catheter through the stricture into the bladder, and to draw off the water.

These operations are not applicable to cases where the obstruction arises from an enlarged prostate gland. In this case, the mouth of the urethra is closed, and no urine is admitted into it; yet even here the operation of puncturing the bladder is more hazardous than the perforation of the enlarged prostate. A silver catheter may be forced forward through the prostate, and carried into the cavity of the bladder; and this has been done on several occasions without being followed by serious consequences, or even by material inconvenience. The opening thus made has sometimes been permanent; at other times, it has appeared to close, and the urine has been passed in the same manner as before the operation, and with equal facility.—G. G. B.]

§ 1. *Of allowing a Catheter to remain in the Urethra and Bladder.*

In cases of debility of the bladder, and where a catheter passes with difficulty, or with great uncertainty, and in cases where it must be used frequently, and for a length of time, it will be necessary to keep an instrument in the urethra and bladder, so as to allow the water to pass through it freely. A common catheter, or one made of the elastic gum, is perhaps the best instrument; but it must be fixed in the canal; this will be best done by its outer end being tied to some external body, as I shall now describe. When the catheter is fairly in the bladder, the outer end is rather inclined downwards, nearly in a line with the body. To keep it in this position, we may take the common strap or belt part of a bag-truss, with two thigh-straps either fixed to it or hooked to it, and coming round each thigh forwards by the side of the scrotum, to be fastened to the belt where the ears of

the bag are usually fixed. A small ring or two may be fixed to each strap just where it passes the scrotum or root of the penis; and, with a piece of small tape, the ends of the catheter may be fixed to those rings, which will keep it in the bladder. A bit of rag about four or five inches long, with a hole at the end of it, passed over the exterior end of the catheter, and the loose end allowed to hang in a basin placed between the thighs, will catch the water which cannot disengage itself from the catheter, and keep the patient dry; or if another curved pipe is introduced into the catheter, it will answer the same purpose.

Under such treatment, the bladder will never be allowed to be distended; and when the patient wants to have the bladder some degree emptied, he has only to strain with his abdominal muscles, by which means he will be able to throw out a great deal at each time.

As the bladder begins to recover its actions, the patient will find that an inclination to make water will come on, and at those times he will also find that the water will come from him without straining with the abdominal muscles; when this takes place readily, the catheter may be taken out, and it will be found that he will be able in future to make water of himself. If it is necessary to keep in the catheter a considerable time, it will be the cause of a great deal of slime and mucus being formed in the urethra and bladder; but I believe this is of no consequence. I have known a catheter kept in this way for five months without any inconveniency whatever.

In all cases where it is necessary to keep an extraneous body for a considerable time in the bladder, whether in an artificial passage or the natural one, it will be proper, a few days after its first introduction, to withdraw it, and examine whether it is incrusting or filling up in its cavity with the calculous matter of the urine. If, after remaining in the bladder for some days, it has contracted none, we need be under no apprehension of its doing it; but if, as frequently happens, it should have collected a considerable quantity, then it will be necessary to have it occasionally withdrawn and cleaned. The best method probably of doing this is to put it in vinegar, which will soon dissolve the stony matter.

§ 2. *Of the increased Strength of the Bladder.*

The bladder, in such cases as have been described, having more to do than common, is almost in a constant state of irritation and action; by which, according to a property in all muscles, it becomes stronger and stronger in its muscular coats; and I suspect that this disposition to become stronger from repeated action is greater in the involuntary muscles than the voluntary; and the reason why it should be so is, I think, very evident; for, in the involuntary muscles, the power should be in all cases capable of overcoming the resistance, as the power is always performing some natural and necessary action; for whenever a disease produces an uncommon resistance in the involuntary parts, if the power is not proportionally increased, the disease becomes very formidable; whereas, in the voluntary muscles there is not that neces-

sity, because the will can stop whenever the muscles cannot follow; and if the will is so diseased as not to stop, the power in voluntary muscles should not increase in proportion.

I have seen the muscular coats of the bladder near half an inch thick, and the fasciculi so strong as to form ridges on the inside of that cavity;¹ and I have also seen the fasciculi very thin, and even wanting in some parts of the bladder, so that a hernia of the internal coat had taken place between the fasciculi and formed pouches.² These pouches arise from the thin parts not being able to support the actions of the strong, as happens in ruptures at the navel or rings of the abdomen.

§ 3. *Of the Distension of the Ureters.*

It sometimes happens that the irritation from the distension of the bladder, and the difficulty in throwing out its contents, is so great that the urine is prevented from flowing freely into that viscus from the ureters, which become thereby preternaturally distended. The pelvis of the kidneys and infundibula are also enlarged; but how far this dilatation of the ureters and pelvis is really owing to a mechanical cause, I am not so clear; or whether it is not a disposition for dilatation arising out of the stimulus given by the bladder. In some cases of long standing, where the bladder had become very thick, and had been for a long time acting with great violence, it had affected the mammillæ, so that the surface of these processes produced a matter, and perhaps even the secreting organs of the kidneys, so that the urine secreted was accompanied with a pus, arising from the irritation being kept up in all these parts.

The urine, in the above cases, is generally stale, even before it is thrown out of the bladder, which, when joined with the circumstance of the linen being constantly kept wet, by the almost continual discharge of urine, becomes very offensive, and it is hardly possible to keep the patient sweet.

§ 4. *Of the Irritability in the Bladder independent of Obstructions to the Passage of the Urine.*

Another disease of the bladder, connected with the present subject, is where that viscus becomes extremely irritable, and will not allow of its usual distension. The symptoms of this disease are very similar to those arising from obstructions to the passage of the urine in the urethra, but with this difference, that in the present disease the urine

¹ This appearance was long supposed to have arisen from a disease of that viscus; but, upon examination, I found that the muscular parts were sound and distinct; that they were only increased in bulk in proportion to the power they had to exert; and that it was not a consequence of inflammation; for in that case parts are blended into one indistinct mass.

² This is, perhaps, the cause of the stone being often found in a pouch formed in the bladder; for the bladder, in cases of stone, is often very strong, which arises from the violent contraction of that viscus, caused by the irritation of the stone on the sides of it; and also from the stone being often opposed to the mouth of the urethra in the time of it making water.

flows readily, because the urethra obeys the summons and relaxes; however, there is often considerable straining, after the water is all voided, arising from the muscular coat of the bladder still continuing its contractions.

This irritability of the bladder often arises from local causes, as a stone, cancer, or tumors forming on the inside, all which produce irritability of this viscus. In such cases the straining is violent, for the cause still remains which continues to give the stimulus of something to be expelled, and the bladder continues to contract till tired, as in the cases of simple irritability, and then there is a respite for a time; but this respite is of short duration, for the urine is soon accumulated.

This disease will in the end be fatal by producing hectic fever.

§ 5. *Of the Cure of Simple Irritability of the Bladder.*

When the symptoms arise from irritability alone, and not from a stone or any local affection, the nature of the complaint may not at first be so obvious; temporary relief may, however, be procured by opium, which is most effectual in slight and recent cases; and if it be applied as near to the part as possible, its effects will be more evident; and therefore it may be given by clyster as well as by the mouth.¹

I should, however, be rather inclined to rely on a blister applied to the perineum, or to the lower part of the small of the back, or upper part of the sacrum if more convenient, than to any other method of cure.

In all cases, where there is an irritation of the bladder, the patient should never endeavor to retain his water beyond the inclination to make it. It hurts the bladder and increases its irritability; and indeed I am apt to think that this circumstance, even in sound parts, is often a predisposing cause of disease in this viscus and its appendage, the urethra; for I have known several cases where it has brought on the spasmodic stricture in the urethra in sound parts, and it is frequently an immediate cause of strangury in those who have either a stricture or a disposition to spasms in those parts.

A gentleman in perfect health, from retaining his urine beyond the inclination, in the playhouse, had all the symptoms of an irritable bladder brought on, which continued for several years, rendering him miserable.

§ 6. *Of a Paralysis of the Acceleratores Urinæ.*

In many irritations of the bladder, the urethra not only relaxes directly on the stimulus to make water being felt in that viscus, as has been described, but a paralysis sometimes takes place in the voluntary muscles of those parts, so that the will cannot command them to contract to hinder the inconveniences that may attend an immediate evacuation of that fluid. If we attempt to stop the water, which is an

¹ Added: "I have known alum whey given, under which treatment the patient got well."—HOME.

act of the will, it is in vain; the acceleratores will not obey, and the water flows.

A blister applied to the perineum will have considerable effect in removing this complaint.

CHAPTER XI.

OF THE DISCHARGE OF THE NATURAL MUCUS OF THE GLANDS OF THE URETHRA.

THE small glands of the urethra and Cowper's glands secrete a slimy mucus, similar to the white of an egg not coagulated. This seldom appears externally, or flows from the urethra, but during the indulgence of lascivious thoughts, and is seldom or never attended to, excepting by those who are either under apprehensions of a gonorrhœa coming on, or imagine that the last infection is not gone off entirely, and are therefore kept in constant terror by this natural discharge. They often find it in such quantity as to leave spots on the shirt, but without color; and often after toying, the lips of the urethra are, as it were, glued together by it, from its drying there, which appearances alarm the mind of the patient without cause. Although this is only a natural discharge, and is secreted, at such times, under the same influence which naturally produces it, it must be owned that it is commonly much increased in those cases of debility arising from the mind, which is probably not easy to be accounted for. It would seem that the contest between the mind and the body increases this secretion, for it cannot be considered as a disease of the parts.

§ 1. *Of the Discharge of the Secretions of the Prostate Gland and Vesiculæ Seminales.*

This complaint is imagined to be the consequence of the venereal disease in the urethra; but how far this is really the case is not certain, though most probably it is not. It is a discharge of mucus by the urethra which generally comes away with the last drops of urine, especially if the bladder is irritable, and still more at the time of being at stool, particularly if the patient be costive, for under such circumstances the straining or actions of the muscles of those parts are more violent. It has generally been supposed that this discharge is semen, and the disease is called a seminal weakness; but it appears, from many experiments and observations, that the discharge is undoubtedly not semen. It is only the mucus secreted either by the prostate gland, by those bags improperly called vesiculæ seminales, or both; and it may not be improper to give here the distinguishing marks between these two fluids. First, we may observe the discharge in question is not of the same color with the semen, and is exactly of the color of

the mucus of the prostate gland and of those bags. It has not the same smell, and indeed it hardly has any smell at all. The quantity evacuated at one time is often much more considerable than the evacuation of semen ever is, and it happens more frequently than it could possibly do were the discharge semen. It is a disease that often attacks old men, where one can hardly suppose much semen to be secreted; and we find that those who are affected with this disease are no more deficient in the secretion and evacuation of the semen, in the natural way, than before they had the disease. If the mind be at ease, this shall take place immediately after a discharge of semen as well as before, which could not be the case were it semen. Farther, if those that labor under this complaint are not connected with women, they are subject to nocturnal discharges from the imagination, as persons who are perfectly sound; and, indeed, most patients, when made acquainted with these circumstances, become very sensible that it is not the semen.¹

It is not clear what the diseased state of the parts is upon which this discharge depends, whether there is a larger secretion of this mucus than natural, or whether it is entirely owing to a preternatural uncommon action of those parts; and if this last, why these parts should be put into action when the bladder, rectum, and abdominal muscles are thrown into action to expel their contents, is not easily explained. It is plain that the most violent actions of these parts are necessary to produce this evacuation; for it does not come with the first of the urine, nor in general with an easy stool.

As it was thought to be a seminal discharge, it was imagined to arise from a weakness in the organs of generation; and as frequent discharges of semen in the natural way generally weaken, it was therefore imagined that this discharge must also weaken very considerably; and the imagination will operate so strongly as to make the patients believe they really are weakened. Whether the cause of such a discharge is capable of weakening, I will not pretend to say; but I believe the discharge simply does not. Fear and anxiety of mind may really weaken the patient. In the cases I have seen of this kind the mind has been more affected than the body.

From my own practice, I can hardly recommend any one medicine, or way of life, for removing this complaint. In one case, I found considerable benefit from giving hemlock internally.

The idea that has been formed of the disease leads to the practice generally recommended, such as giving strengthening medicines of all kinds; but I never saw any good effects from any of them, and I should rather be inclined to adopt the soothing plan to prevent all violent actions. Keeping the body generally open will in some degree moderate the discharge, and probably may effect a cure in the end.

[RICORD.—Without indorsing Hunter's views on the functions of the vesiculæ seminales, which, as all researches since his time have

¹ Added: "A gentleman has often a discharge of mucus from the urethra with the last drops of urine, and when he goes to stool. But after having connection with women it does not take place."—HOMB.

incontestably proved, are reservoirs of the semen, I adopt his explanation of seminal emissions almost entirely. Daily observation has proved to me that cases of true spermatorrhœa are much less frequent than has lately been asserted. I have had an opportunity of seeing a very large number of these patients, or hypochondriacs, and most of them, I find, have only discharges of mucus, entirely free from animalcules and other characteristics of the semen. I know that the contrary may have been observed in many cases; but has there not been a little exaggeration?

Some men, doubtless, lose their semen with very great facility; a lascivious thought, the slightest friction, timidity added to heightened desires in the presence of women, and their first attempts at intercourse, produce emissions, without intromission being necessary or even possible; also prolonged continence, dorsal decubitus, irritation of the intestinal canal, etc., cause nocturnal pollutions in many subjects. But there is a great difference between this state of things and the overdrawn picture which has recently been given us; and works on spermatorrhœa have only confirmed what Montesquieu said: "Though physicians frighten us by the descriptions they give of disease, they soon reassure us by proclaiming a specific."

However, these remarks are applicable only to the exaggerated view of the subject which has lately been made public, and which has created a true epidemic of *spermatophobists*, tormented individuals, sad, pettish hypochondriacs, in whom cauterization of the neck of the bladder does not always cure the brain.

I will say in conclusion, that, without the authority of M. Lallemand's distinguished name, and above all, without the remarkable observations on seminal emissions¹ which he has published, I should ask myself, as Hunter did, if such writings be not more injurious than useful. But, I repeat, in order that ideas may not be attributed to me which I do not entertain, that although I forbid these writings to be read by men of the world, I cannot recommend them too highly to the attention of practitioners.—RICORD.]

CHAPTER XII.

OF IMPOTENCE.

THIS complaint is by many laid to the charge of Onanism, at an early age; but how far this is just, it will in many cases be difficult to determine; for, upon a strict review of this subject, it appears to me to be by far too rare to originate from a practice so general.

How far the attributing to this practice such a consequence is of public utility, I am doubtful, particularly as it is followed most com-

¹ *Involuntary Seminal Emissions.* Paris, 1836-1842, 3 vols.

monly at an age when consequences are not sufficiently attended to, even in things less gratifying to the senses; but this I can say with certainty, that many of those who are affected with the complaint in question are miserable from this idea; and it is some consolation for them to know that it is possible it may arise from other causes. I am clear in my own mind that the books on this subject have done more harm than good.¹

In the cases of this kind that have come under my care, although the persons themselves have been very ready to suppose that the disease has arisen from the cause here alluded to, yet they did not appear to have given more into the practice than common; and, in particular, the worst case I have ever seen was where but very little of this practice had ever been used, much less than is common among boys.²

Nothing hurts the mind of a man so much as the idea of inability to perform well the duty of the sex. If his scrotum hangs low it makes him miserable; he conceives immediately that he is to be rendered incapable of performing those acts in which he prides himself most. It is certain that the relaxation or contraction of the scrotum is in some degree a kind of sign of the constitution; but it is of the constitution at large, not of those parts in particular. Nurses are so sensible of the contraction of that part being a sign of health in the children under their care, that they take notice of it. The relaxation of it in them cannot be supposed to arise from inability to perform those acts at one time more than another. The face is one of the signs of the constitution, and has as much to do with those peculiar acts as the scrotum. However, we must allow that this part is much more lax than what we should conceive was intended by nature, even in young men who are well in health; but as this is very general, I rather suspect that it arises from the circumstances of the part being kept too warm and always suspended, the muscles hardly ever being allowed to act, so that they have less force. How far it is the same in those countries where the dress does not immediately suspend those parts, I have not been able to ascertain. Warmth appears to be one cause; for we find that cold has generally an immediate effect; but this is perhaps owing to its not being accustomed to cold, which, if it were, it might possibly become as regardless of as it is of warmth. What the difference is in this part, in a cold and warm climate, all other circumstances the same, I do not know. But whatever may be the cause, if it is really in common more lax than intended by nature, it is of no consequence as to the powers of generation. The testicles will secrete, whether kept high or low.³

¹ There are, doubtless, many collegians who recollect the little effect reading Tissot had upon them in deterring them from this habit. Since the work of this remarkable author, nothing better has been produced than M. Deslandes's book (*Onanism and Other Venereal Abuses considered in Relation to Health*, Paris, 1835), which can certainly be recommended to be read, at least by physicians.—RICORD.

² Added: "Which is particularly pernicious from the frequency of the repetition, there being no want of opportunity."—HOME.

³ Sir E. Home has here added a note, in which he expresses the belief that Onanism is more hurtful than the author imagined; and that its being practised before the parts have arrived at maturity in weakly constitutions, may prevent their ever attaining their full power and development. This opinion is not only in itself reasonable, but seems also to be confirmed by experience.—G. G. B.

§ 1. *Of Impotence depending on the Mind.*

As the parts of generation are not necessary for the existence or support of the individual, but have a reference to something else, in which the mind has a principal concern, a complete action in those parts cannot take place without a perfect harmony of body and of mind; that is, there must be both a power of body and disposition of mind; for the mind is subject to a thousand caprices, which affect the actions of these parts.

Copulation is an act of the body, the spring of which is in the mind; but it is not volition; and according to the state of the mind so is the act performed. To perform this act well, the body should be in health, and the mind should be perfectly confident of the powers of the body; the mind should be in a state entirely disengaged from everything else; it should have no difficulties, no fears, no apprehensions; not even an anxiety to perform the act well; for even this anxiety is a state of mind different from what should prevail; there should not be even a fear that the mind itself may find a difficulty at the time the act should be performed. Perhaps no function of the machine depends so much upon the state of the mind as this.

The will and reasoning faculty have nothing to do with this power; they are only employed in the act, so far as voluntary parts are made use of; and if they ever interfere, which they sometimes do, it often produces another state of mind, which destroys that which is proper for the performance of the act; it produces a desire, a wish, a hope, which are all only diffidence and uncertainty, and create in the mind the idea of a possibility of the want of success, which destroys the proper state of mind, or necessary confidence.

There is perhaps no act in which a man feels himself more interested, or is more anxious to perform well, his pride being engaged in some degree, which, if within certain bounds, would produce a degree of perfection in an act depending upon the will, or an act in voluntary parts; but when it produces a state of mind contrary to that state on which the perfection of the act depends, a failure must be the consequence.

The body is not only rendered incapable of performing this act, by the mind being under the above influence, but also by the mind being perfectly confident of its power, but conscious of an impropriety in performing it; this, in many cases, produces a state of mind which shall take away all power. The state of a man's mind, respecting his sister, takes away all power. A conscientious man has been known to lose his powers on finding the woman he was going to be connected with unexpectedly a virgin.

Shedding tears arises entirely from the state of the mind, although not so much a compound action as the act in question; for none are so weak in body that they cannot shed tears; it is not so much a compound action of the mind and strength of body, joined, as the other act is; yet if we are afraid of shedding tears, or are desirous of doing it, and that anxiety is kept up through the whole of an affecting scene,

we certainly shall not shed tears, or at least not so freely as would have happened from our natural feelings.

From this account of the necessity of having the mind independent respecting the act, we must see that it may very often happen that the state of mind will be such as not to allow the animal to exert its natural powers; and every failure increases the evil. We must also see, from this state of the case, that this act must be often interrupted; and the true cause of this interruption not being known, it will be laid to the charge of the body, or want of powers. As these cases do not arise from real inability, they are to be carefully distinguished from such as do; and perhaps the only way to distinguish them is to examine into the state of mind respecting this act. So trifling often is the circumstance which shall produce this inability depending on the mind, that the very desire to please shall have that effect, as in making the woman the sole object to be gratified.

Cases of this kind we see every day, one of which I shall relate, as an illustration of this subject, and also of the method of cure.

A gentleman told me that he had lost his virility. After above an hour's investigation of the case, I made out the following facts. That he had, at unnecessary times, strong erections, which showed that he had naturally this power; that the erections were accompanied with desire, which are all the natural powers wanted; but that there was still a defect somewhere, which I supposed to be from the mind. I inquired if all women were alike to him; his answer was, no; some women he could have connection with as well as ever. This brought the defect, whatever it was, into a smaller compass; and it appeared that there was but one woman that produced this inability, and that it arose from a desire to perform the act with this woman well, which desire produced in the mind a doubt, or fear of the want of success, which was the cause of the inability of performing the act. As this arose entirely from the state of the mind, produced by a particular circumstance, the mind was to be applied to for the cure; and I told him that he might be cured if he could perfectly rely on his own power of self-denial. When I explained what I meant, he told me that he could depend upon every act of his will, or resolution; I then told him, if he had a perfect confidence in himself in that respect, that he was to go to bed to this woman, but first promise to himself that he would not have any connection with her for six nights, let his inclinations and powers be what they would, which he engaged to do, and also to let me know the result. About a fortnight after, he told me that this resolution had produced such a total alteration in the state of his mind that the power soon took place; for instead of going to bed with the fear of inability, he went with fears that he should be possessed with too much desire, too much power, so as to become uneasy to him, which really happened; for he would have been happy to have shortened the time; and when he had once broke the spell, the mind and powers went on together, and his mind never returned to its former state.¹

¹ Added: "Several similar instances have come under my care, but there is an evident objection to multiplying unnecessarily cases of this kind."—HOME.

§ 2. *Of Impotence from a Want of proper Correspondence between the Actions of the different Organs.*

I lately observed, when treating of the diseases of the urethra and bladder, that every organ in an animal body, without exception, was made up of different parts, whose functions, or actions, were totally different from each other, although all tending to produce one ultimate effect. In all such organs, when perfect, there is a succession of motions, one naturally arising out of the other, which in the end produces the ultimate effect; and an irregularity alone in these actions will constitute disease, at least will produce very disagreeable effects, and often totally frustrate the final intention of the organ. I come now to apply this principle to the actions of the testicle and the penis; for we find that an irregularity in the actions of these parts sometimes happens in men, producing impotence; and something similar, probably, may be one cause of barrenness in women.

In men, the parts subservient to generation may be divided into two, the essential and the accessory. The testicles are the essential; the penis, &c., the accessory. As this division arises from their uses or actions in health, which exactly correspond with one another; a want of exactness in the correspondence, or susceptibility of those actions, may also be divided into two: where the actions are reversed, the accessory taking place without the first, or essential, as in erections of the penis, where neither the mind nor the testicles are stimulated to action; and the second is where the testicle performs the action of secretion too readily for the penis, which has not a corresponding erection. The first is called priapism, and the second is what ought to be called seminal weakness.

The mind has considerable effect on the correspondence of the actions of these two parts; but it would appear in many instances that erections of the penis depend more on the state of the mind than what the secretion of the semen does; for many have the secretion, but not the erection; but in such the want of erection appears to be owing to the mind only.

Priapism often arises spontaneously, and often from visible irritation of the penis, such as the venereal gonorrhœa, especially when violent. The sensations of such erections is rather uneasy than pleasant; nor is the sensation of the glans at the time similar to that arising from the erections of desire, but more like to the sensation of the parts immediately after coition. Such as arise spontaneously are of more serious consequence than those from inflammation, as they proceed, probably, from causes not curable in themselves, or by any known methods.

The priapism arising from inflammation of the parts, as in a gonorrhœa, is attended with nearly the same symptoms; but generally the sensation is that of pain, proceeding from the inflammation of the parts. It may be observed, that what is said of priapism is only applicable to it when a disease of itself, and not as a symptom of other diseases, which is frequently the case.¹

¹ Added: "A gentleman had a priapism for two years; it originated from an irritation in the bladder, which went off at the time the priapism came; it only takes place

The common practice in the cure of this complaint is to order all the nervous and strengthening medicines, such as bark, valerian, musk, camphor, and also the cold bath. I have seen good effects from the cold bath; but sometimes it does not agree with the constitution, in which cases I have found the warm bath of service. Opium appears to be a specific in many cases, from which circumstance I should be apt, upon the whole, to try a soothing plan.

Seminal weakness, or a secretion and emission of the semen without erections, is the reverse of a priapism, and is by much the worst disease of the two. There is great variety in the degrees of this disease, there being all the gradations from the exact correspondence of the actions of all the parts to the testicles acting alone; in every case of the disease there is too quick a secretion and evacuation of the semen. Like to the priapism, it does not arise from desires and abilities, although when mild it is attended with both, but not in a due proportion; a very slight desire often producing the full effect. The secretion of the semen shall be so quick that simple thought, or even toying shall make it flow.

Dreams have produced this evacuation repeatedly in the same night; and even when the dreams have been so slight, that there has been no consciousness of them when the sleep has been broken by the act of emission. I have known cases where the testicles have been so ready to secrete that the least friction on the glans has produced an emission; I have known the simple action of walking, or riding, produce this effect, and that repeatedly in a very short space of time.

A young man, about four or five and twenty years of age, not so much given to venery as most young men, had these last-mentioned complaints upon him. Three or four times in the night he would emit; and if he walked fast, or rode on horseback, the same thing would happen. He could scarcely have connection with a woman before he emitted, and in the emission there was hardly any spasm. He tried every supposed strengthening medicine, as also the cold bath and sea-bathing, but with no effect. By taking twenty drops of laudanum, on going to bed, he prevented the night emissions; and by taking the same quantity in the morning, he could walk or ride without the before-mentioned inconvenience. I directed this practice to be continued for some time, although the disease did not return, that the parts might be accustomed to this healthy state of action; and I have reason to believe the gentleman is now well. It was found necessary, as the constitution became more habituated to the opiate, to increase the dose of it.

The spasms upon the evacuation of the semen in such cases are extremely slight, and a repetition of them soon takes place; the first emission not preventing a second; the constitution being all the time but little affected.¹ When the testicles act alone, without the accessory

in the night, and mostly in his sleep, and immediately awakens him; having connection makes it worse."—HOME.

¹ It is to be considered that the constitution is commonly affected by the spasms only, and in proportion to their violence, independent of the secretion and evacuation of the semen. But in some cases even the erection going off without the spasms on the emission shall produce the same debility as if they had taken place.

parts taking up the necessary and natural consequent action, it is still a more melancholy disease; for the secretion arises from no visible or sensible cause, and does not give any visible or sensible effect, but runs off similar to involuntary stools, or urine. It has been observed that the semen is more fluid than natural in some of these cases.

There is a great variety in the diseased actions, of these parts, of which the following case may be considered as an example.

A gentleman has had a stricture in the urethra for many years, for which he has frequently used a bougie, but of late has neglected it. He has had no connection with women for a considerable time, being afraid of the consequences. He has often in his sleep involuntary emissions, which generally awake him at the paroxysm; but what surprises him most is, that often he has such without any semen passing through the penis, which makes him think that at those times it goes backwards into the bladder. This is not always the case, for at other times the semen passes forwards. At the time the semen seems to pass into the bladder he has the erection, the dream, and is awaked with the same mode of action, the same sensation, and the same pleasure, as when it passes through the urethra, whether dreaming or waking. My opinion is that the same irritation takes place in the bulb of the urethra without the semen, that takes place there when the semen enters, in consequence of all the natural preparatory steps, whereby the very same actions are excited as if it came into the passage; from which one would suppose that either semen is not secreted, or if it be, that a retrograde motion takes place in the action of the *acceleratores urinæ*. But if the first be the case, then we may suppose that in the natural state the actions of those muscles do not arise simply from the stimulus of the semen in the part, but from their action being a termination of a preceding one making part of a series of actions. Thus they may depend upon the friction, or the imagination of a friction on the penis, the testicles not doing their part, and the spasm in such cases arising from the friction, and not from the secretion.

In many of those cases of irregularity, when the erection is not strong, it shall go off without the emission; and at other times an emission shall happen almost without an erection; but these arise not from debility, but affections of the mind.

In many of the preceding cases, washing the penis, scrotum, and perineum with cold water is often of service; and to render it colder than we find it in some seasons of the year, common salt may be added to it, and the parts washed when the salt is almost dissolved.

CHAPTER XIII.

OF THE DECAY OF THE TESTICLE.

IT would appear, from some circumstances, that the parts of generation are not to be considered as necessary parts of the animal machine, but only as parts superadded for particular purposes, and therefore only necessary when those particular purposes are to be answered; for we may observe that they are later in coming to maturity than any other parts, and are more liable to decay. Thus far, in their natural properties, they are different from most other parts of our body, the teeth only excepted, which are similar in some of those circumstances.

The testicles appear to be more subject to spontaneous disease than any other part of the body; but what is the most singular thing of all is the wasting of those bodies. One or both testicles shall wholly disappear, like to the thymus gland, or *membrana pupillaris*, &c., in the infant. This we do not find in any parts of the body which are essential to its economy, excepting the parts are of no farther use, and might become hurtful in the body, as in the instance of the *membrana pupillaris*. But the testicles do not undergo this change as if in consequence of an original property stamped upon them, as is the case of the thymus gland, whenever the age of the person is such as to render them useless, but are liable to it at any age; and therefore the disposition is in the testicles themselves, independent of any connection with the animal economy. An arm or leg may lose its action, and may waste in part, but never wholly.

Testicles have been known to waste in cases of rupture, probably from the constant pressure of the intestine. Mr. Pott has given us cases of this kind. I have seen in the hydrocele the testicle almost wasted to nothing, probably from the compression of the water; but in all these the causes of wasting are obvious, and would probably produce similar effects in other parts of the body under the same circumstances; but a testicle without any previous disease wastes wholly; or, at other times, it inflames, either spontaneously or from sympathy with the urethra, becomes large, and then begins to subside, as in the resolution of common inflammation of the body, but does not stop at the former size, but continues to decay till it wholly disappears. The following cases are instances of this:—

CASE I. A gentleman, about nine years ago, had a gonorrhœa with a bubo, which suppurated. A swelling of one of the testicles came on, for which he used the common methods of producing resolution, and seemingly with success. All the other symptoms being removed, he thought himself quite well; but some time after, he found that the testicle which had been swelled was become rather smaller than the

other, which made him now pay attention to it; this decrease continued till it wasted entirely. For some years past there has been no appearance of a testicle. He is not in the least different in inclination or powers from what he was before.

CASE II.: communicated by Mr. Nanfan. "A gentleman, aged about eighteen, who never had any venereal complaint, has had two different attacks of the same nature, one in each testicle. February 3, 1776, after skating a few hours, without having to his knowledge received any injury from it, he was seized with a violent pain and inflammation of the left testicle, which, in a few days, increased much in size. A surgeon being sent for, followed the usual treatment in such cases of inflammation. In about six weeks, the inflammation and swelling gradually subsided, some hardness only remaining. A mercurial plaster was now applied, which, after being worn for some time, was left off. The left testicle ever since has continued gradually to decrease, and is no larger than a horsebean; indeed, the body of the testicle is quite decayed, nothing remaining but what seems part of the epididymis. It appears to have no sense of pain, except when pressed, and is very hard and uneven on its surface. The spermatic cord is not in the least affected. October 20, 1777, he was seized in the same manner in the right testicle without any apparent cause, whereupon I was applied to. He was immediately bled, took an opening mixture, after that a saline mixture, with tartar emetic; and a fomentation and embrocation of spiritus mindereri and spiritus vini was used. On the 27th, a cataplasm was applied of linseed meal and aqua vegeto-mineralis. This treatment was persisted in till about the middle of November. The inflammation went off, and the testicle seemed much in the natural state. On December 19, I was applied to again; it seemed to be growing hard and decreasing in size, much in the same manner as the other had done, which made him very unhappy. I ordered him some pills, with calomel and tartar emetic, in hopes of increasing the secretion of the glands in general, and making some change in the testicle. At first, this method seemed to be of service, but soon lost its effects, and the testicle began to decrease just as the other did." Mr. Adair and Mr. Pott were consulted with me, but nothing could be thought of that could give any hopes of success. I advised him to employ the parts in their natural uses as much as inclination led him; but all was to no purpose, the testicle continued to decrease till not a vestige was left.

CASE III.: communicated by Dr. Cothom, of Worcester. "A young man, aged sixteen, was suddenly seized with great coldness and shivering, attended with frequent rigors. During this paroxysm, which continued three hours, his pulse was small and contracted, and so exceedingly quick that the strokes of the artery were with difficulty counted. This period was succeeded by an intense heat, and a strong, hard, full pulse, on which account he was copiously bled; a dose of cooling physic was immediately administered, and a clyster thrown up to promote its more speedy effects. In the evening, the bleeding was repeated. All this day he complained of excruciating pain in his loins and the side of his belly, descending down into the scrotum.

On examining the part affected, I saw an appearance of inflammation in the groin of the left side, and a great tension about the ring of the abdominal muscles, with an enlargement of the testicles. These parts were now ordered to be fomented with a discutient fofus, strongly impregnated with crude fal ammoniac, and to be bathed with *spiritus mindereri* and *spiritus volat. aromat.*, before the application of each ftupe; and he was directed to take fix grains of the *pulv. antimonalis*, with fifteen grains of nitre, every three hours; his food to be thin gruel, with fruit and lemon-juice, and his drink barley-water, with fugar and nitre. Notwithstanding this antiphlogiftic plan of frequent cooling phytic, anodynes, three emetics, and thirteen bloodlettings, the fever continued, and the pain, inflammation, and tumor increased till the eighth day, including the first day of feizure, when, feeing no hope of difcuffing the tumor, the tefticle being nearly as large as a child's head, I attempted, by emollient fofutes and maturing cataplafms, to bring it to fuppuration. On the 10th, a fluctuation was perceptible, and on the 12th, much more fo, the fcrotum having then put on a livid appearance. I ufed every poffible argument for permission to open it, but he, being now quite eafy, would not admit it. On the 15th, the patient was again attacked with rigors, coldnefs, and fhivering, fucceeded by a great feverifh heat, which foon terminated in a profufe fweat; yet no pain attended this paroxyfm. In the evening, however, the tumor was fo prominent that I was of opinion it would open fpontaneoufly before morning, when I hoped to obtain his confent to enlarge the aperture; but this not happening, and all entreaties relating to the neceffity of an incifion proving ineffectual, I contented myfelf by giving the bark with elixir of vitriol. From this time, after every paroxyfm of fever, the tefticle was obferved to decrease. Not being permitted to make an incifion, and his ftrength and appetite continuing good, I began to entertain hopes of fuccefs without it, and advised him to perfift in the ufe of the tonic and anti-feptic plan, with the addition of ftupes wet with the decoction of bark, to be constantly applied, by which means, at the end of thirty days from the firft feizure, the pus was totally abforbed. The tefticle then appeared to be of the fize of a hen's egg, and was as hard as a fcirrhus. I directed it to be rubbed, night and morning, with equal parts of the unguent. *mercur. fort.* and *liniment. volat. camphorat.*, and ordered, internally, fome mercurial alteratives, with a decoction of bark. By thefe aids, his night-fweats, and every other difagreeable fymptom, gradually abated; he gathered ftrength, flefh, and fpirits very faft, and the difeafed tefticle went on constantly decreasing, though very flowly, for near twelve months, at the expiration of which time there was no other appearance of it than a confufion of loofe fibres, obvious to the feeling, in the upper part of the fcrotum. About a month ago, the patient confented to my examining it. Of the tefticle there was not the leaft veftige; neither could I perceive the *tunica vaginalis* on that fide in the groin; but upon the os pubis, and a little under it, I could embrace with my finger and thumb the cord, and diftinguifh the veffels, which were without the leaft degree of hardness or fcirrhofity; and if I preffed one in particular, I gave

him exquisite pain for a moment. He is in perfect health, of a strong, robust constitution, and has fine, healthy children; the only change which he has perceived in the constitution has been a propensity to grow fat, which neither temperance nor violent exercise on horseback daily, with little rest, will prevent."¹

[RICORD.—*Plastic syphilitic sarcocele*, or albuginitis, a symptom of tertiary syphilis, which Hunter was not acquainted with, is also a frequent cause of atrophy of the testicles. It may even be said that atrophy is the fatal termination of this affection when art does not intervene in time.

Varicocele must also be considered as a cause. This affection was formerly thought to be incurable, or rather they did not dare to treat it; but, at the present day, it is successfully treated by my operation with a subcutaneous ligature, which is now ranked among those scientific operations, which are the most simple, the most inoffensive, and the most certain in their results.]

CHAPTER XIV.

GONORRHOEAL OPHTHALMIA.

BY P. RICORD.

WE see that Hunter says nothing of gonorrhoeal ophthalmia, which, however, is a very serious and not uncommon complication of urethral gonorrhœa.

¹ Added: "CASE IV. A gentleman had a stricture, for which he passed a bougie; inflammation and swelling came upon one of the testicles; the inflammation was removed, and the swelling subsided; the testicle continued to diminish till it was extremely small.

"CASE V. A gentleman had received a hurt upon one of his testicles in riding; it inflamed and swelled to a very great degree; the symptoms went off, and he considered himself well; it did not, however, remain of the natural size, but gradually diminished till it entirely disappeared.

"CASE VI. A gentleman was lifted from the ground by the hands with a considerable jerk; he felt immediately a violent pain in the groin of the left side, and an inflammation and swelling came upon the right testicle; when this subsided, the testicle diminished to the size of a pea, and was very hard in its substance.

"CASE VII. A gentleman, eighteen years of age, had a swelling brought upon one of his testicles by lying upon wet grass; it afterwards continued to diminish till it was only one-fourth of the natural size.

"CASE VIII. A gentleman, twenty years of age, had been attacked at various times in the preceding eight years with violent pain and swelling in the right testicle and spermatic cord, which went entirely off, till two years ago there was a more violent seizure; for eight hours the pain was intolerable, and the swelling very great; it confined him six weeks. Since that time it has been diminishing in size and increasing in hardness; at present, it is as small as a horsebean, and the spermatic cord is contracted. The left testicle has occasionally swelled, but always recovered its usual size. During the time he was affected with this pain, he has felt at intervals a pain about the neck of the bladder, especially when he made water, but not in any violent degree; he likewise frequently feels during these attacks a sensation like the circulation of some fluid within the testicles."—HOME.

Gonorrhœal ophthalmia appears under two distinct forms; both of which, careful observation forces us to admit, though each in turn has been denied by oculists, who have been willing to admit only one, to the exclusion of the other.

I. Gonorrhœal ophthalmia may be the consequence of direct contagion, that is to say, the result of the application to a sound eye of muco-pus from a gonorrhœal urethritis, or from another eye affected with gonorrhœal ophthalmia. The contagious matter may be conveyed from the urethra of the patient himself to his own eye, or from one eye to the other; or, it may be furnished by the urethra or the eye of another person.

I have never seen this first form of gonorrhœal ophthalmia—which comes under the head of severe purulent ophthalmia—accompany or follow balano-posthitis, vaginitis, or discharges from the uterus. Laying aside the very rare cases, where it is produced by gonorrhœal muco-pus furnished by another person, it always occurs in connection with urethral gonorrhœa. It is also decidedly more frequent in men than in women, which coincides with the much greater frequency of urethral gonorrhœa in the former.

Ophthalmia neonatorum would seem to be an exception to this rule, if it were not commonly due to other causes. However, it is not impossible that while traversing the genital passages of the mother, the infant's eyes are soiled by irritating matter capable of inflaming them. An able, but probably absent-minded professor has said that this is impossible, because children are born with their eyes shut! This might be believed if the eyelids were soldered together, and if, in the difficult journey which children have to take in coming into the world, their eyelids did not run the chance of being often separated, and their eyes exposed.

The origin of the urethritis makes no difference in the ophthalmia. I have seen very severe ophthalmias caused by gonorrhœas which followed connection with women during their courses, or women affected simply with purulent uterine catarrh; and also in cases, which not unfrequently occur, where nothing could be found in the women to explain the urethral discharge in the men.

As soon as the urethral discharge becomes *purulent*, or muco-purulent, and so long as it continues in this state, it may affect the eyes.

This form of gonorrhœal ophthalmia does not influence the urethral discharge; the latter does not stop to give place to the former, and if, when the conjunctivitis is most intense, the discharge sometimes diminishes in quantity, it is either an effect of revulsion, or more generally occurs under the influence of other causes.

Any of the ordinary causes of severe purulent ophthalmia may combine with the more special cause in producing this *urethral* ophthalmia, as we may call it. These causes may even act alone in a subject affected with gonorrhœal urethritis, and produce a concomitant purulent ophthalmia independent of the urethritis. This will explain how it happens that, at certain periods, we suddenly meet with an increased number of apparently gonorrhœal ophthalmias, although the number of urethral gonorrhœas continues the same.

Daily observation in a large hospital and in an extended private practice, does not allow me to admit that gonorrhœal ophthalmia may ever be produced by *exhalations* from a urethral gonorrhœa, conveyed by the air.

The other morbid secretions, which are called venereal, have been considered capable of causing gonorrhœal ophthalmia. There is even a celebrated case on record of an ophthalmia produced by the pus of a bubo which was ejected into the eye of a surgeon as he was opening the abscess. But if pus from a bubo, a chancre, etc., can give rise to the affection under consideration, ought we not to see more frequent instances of it? Are patients, who have ulcerated buboes, or freely suppurating chancres, more careful or more cleanly than those who have discharges from the urethra?

It is not true that gonorrhœal ophthalmia is connected with gonorrhœal cophosis, coryza, bronchitis, or gonorrhœa of the mouth; these affections have never been met with except in books. Urethral gonorrhœa does not prevent a person from having coryza or bronchitis, but it does not cause them. A person may also have catarrhal ophthalmia at the same time that he has a gonorrhœa.

That form of gonorrhœal ophthalmia, which may be considered the result of contagion, generally affects only one eye. Its seat is in the palpebral and ocular conjunctiva.

At first, the patient sometimes experiences a slight sensation of heat and itching, as if he had a speck of dust or other foreign body in the eye. The eyelids are often stuck together with a little dried mucus, forming a crust. The conjunctiva becomes injected and reddened over more or less of its palpebral portion, especially on the lower lid; but the redness and swelling, which soon appear, extend rapidly to the ocular conjunctiva, if the disease did not commence there also at the same time. I have often detected this affection at its very commencement, before the patients themselves were aware of its presence.

In some cases, the inflammation is not immediately followed by a morbid secretion; but generally the latter appears with great rapidity and is one of the first symptoms. I have seen patients go to bed at night, without having noticed anything the matter with their eyes, and wake up in the morning with a very decided discharge. It consists at first of muco-pus, which appears as striæ in the oculo-palpebral fold; a very abundant suppuration soon follows and frequently with great rapidity. The discharge may be clear, serous, white, yellowish or pale, and rarely colorless. It trickles down on the cheek, especially when the eyelids are separated, and often excoriates the skin with which it comes in contact. Generally, an almost pseudo-membranous portion, more consistent than the rest, remains on the eye or eyelids, and cannot be detached except by a jet of water thrown upon the eye from a small syringe. The conjunctiva becomes more and more injected and swollen throughout the whole of its palpebral and ocular surfaces, and even seems to be softened. The sub-conjunctival cellular tissue becomes infiltrated, and the ocular mucous membrane is thus raised in the form of a ring around the transparent cornea, forming a serous or œdematous chemosis. On the eyelids, a swelling takes place in the same

manner, and often attains a considerable size. The superior lid especially is red, tense, shiny, and immovable; its free border overlaps the inferior lid, confines its lashes, and often brings them in contact with the eye. Sometimes the eyelids are everted, and acute ectropion results, with strangulation of the mucous membrane by the orbicularis muscle. M. Desmarres, in his excellent treatise on diseases of the eyes, compares this strangulation to what takes place in prolapsus of the rectum. The mucous membrane often bleeds, or the discharge becomes sanguinolent, sero-sanguinolent, or sanious. Granulations are also developed, particularly on the palpebral conjunctiva; they spring from the mucous follicles as in other varieties of purulent ophthalmia. The discharge then assumes greater consistency; it becomes purulent, and presents a greenish-yellow color.

If the disease increase in intensity, true phlegmonous inflammation may succeed the acute cedema of the eyelids. The chemosis, which was at first cedematous, may become bloody, and especially phlegmonous, forming a kind of hard, fleshy ring, which constricts and destroys the transparent cornea.

The cornea may remain intact up to this time; but in certain cases, at the end of forty-eight hours, and sometimes later—within the course of seven or eight days from the commencement of the disease—this membrane loses its transparency, and a cloud is spread uniformly over its surface; it soon swells and softens, and more or less general opacity supervenes, owing to purulent infiltration between its lamellæ. This softening, which gives it a conical shape, is sometimes partial, and then the cornea is not of the same width in all its diameters. Small abscesses follow sooner or later, which open, allowing pus to escape, and are succeeded by ulcers which are often very large. At other times, the cornea seems to be destroyed layer by layer from before backwards. In cases of phlegmonous chemosis especially, an opaque, yellowish circle is often seen, more or less distant from the circumference of the cornea, in the midst of which there still exists a transparent spot, which soon becomes cloudy. It is this circle which is often followed by an unguicular ulcer. But whether the cornea is perforated by ulceration, or is mortified and detached in one piece, the aqueous humor escapes with the crystalline lens, and the iris is protruded in the form of a hernia.

Finally, gonorrhœal ophthalmia, after having attained its maximum severity, or when it is arrested at a less severe stage, may continue stationary or begin to subside. The discharge diminishes in quantity and consistency, and tends to become serous as at first. Cases are sometimes met with where the cornea, which has escaped the disease and remained transparent up to this period, suddenly suppurates, when the discharge has become almost serous again. Relapses also take place in some instances, and may recur many times and at various intervals.

Gonorrhœal ophthalmia is attended with little pain at first; the pain does not commence till the swelling of the parts is considerable, and phlegmonous chemosis or ulcerations of the cornea take place. The pain may extend to the forehead, to the temples, and sometimes to the

teeth; in some cases it is a throbbing pain. Photophobia may be absent, or appear only for a short time in some patients. The contact of the tears, which are augmented and rendered irritating, sometimes excites a severe burning pain, analogous to that which the urine produces in an inflamed urethra. Generally, there is no constitutional reaction at the outset, nor does it supervene till the deeper tissues are involved, or the entire globe of the eye is inflamed.

The course of gonorrhoeal ophthalmia is very rapid; it may destroy the eye in a few hours. In some cases it appears mild at first, continues stationary for some days, and then suddenly assumes a state of great severity.

This severe ophthalmia may, however, terminate in resolution. If the transparent cornea has not been too extensively involved, it may recover its normal state. Opacities, varying in thickness and extent, disappear; ulcerations, even of large size, often cicatrize without leaving any trace behind them, or without greatly interfering with vision. But when the cornea has been more deeply affected, it may present opacities, indelible cicatrices, staphyloma, adhesions, or hernia of the iris. Finally, granulations—which are in some instances fungous—may remain on the conjunctiva.

There is no pathognomonic diagnostic sign of gonorrhoeal ophthalmia aside from the cause to which we believe it should be attributed. In the color of the inflamed conjunctiva, which some complaisant authors have thought *coppery*; in the nature and color of the discharge; in the intensity of the disease, and its ordinarily acute or sub-acute course, there is nothing characteristic which may not be found in other purulent ophthalmias. The same is true of buboes behind the ears, which, up to the present time, have been seen by M. Hairion alone.

The prognosis is generally grave, and the more so, the later a physician is called, and the more the cornea is involved.

Treatment.—The treatment of gonorrhoeal ophthalmia should be both local and general.

We should commence with local treatment. Of all remedies, that which has succeeded best in my hands, is cauterization of the whole inflamed conjunctiva with nitrate of silver. For this purpose, a crayon of nitrate of silver is cut perfectly smooth; the eyelids are everted, the superior one first; the nitrate is passed over the mucous membrane so as to whiten its surface, which is afterwards dried or washed with fresh water, so as not to leave any bits of the caustic to come in contact with the cornea; the eyelid is replaced; the inferior lid is everted in turn, and is touched in the same way, and with the same precaution, as well as all of the ocular conjunctiva that can be reached; always sparing the cornea, which may be better protected by being smeared with a little oil of sweet almonds.

If there be any cedematous chemosis, it should first be excised. If it be phlegmonous, and curved scissors cannot remove it, it should be scarified, as Scarpa directed; this is one of the most important requisites in the treatment.

Having done this, the eye should be covered with fine and light compresses, soaked in a decoction of quince seeds and poppy heads.

But it is especially necessary to make injections or irrigations every hour, or every half hour, and even oftener, when the suppuration is very abundant, so as not to let the pus remain in the eye, which has become in a measure an abscess, and requires incessant evacuation to prevent maceration of the cornea, and all the trouble which may result from retention of the pus.

I generally order frictions with extract of belladonna around the orbit and in the nostril of the affected side.

The head should be kept elevated, and the eyes removed from the action of the light.

The above is the most urgent part of the treatment. It is necessary to cauterize repeatedly on the same day, or else on following days, so long as no favorable modification of the disease is obtained; but still, other energetic means should be used at the same time. Blood should be drawn from the arm once or oftener, according to the strength of the patient and the development of the pulse, especially if there be fever.¹ Leeches in large numbers should be applied over the course of the jugular vein, and to the naso-labial fold. Purgatives should be administered, and saline purgatives in preference to calomel. Foot-baths, with the addition of coarse salt, or warm applications to the feet, should also be prescribed.

When cauterization is no longer necessary, a collyrium should be used, composed of a solution of a grain and a half of nitrate of silver to an ounce of distilled water. This collyrium is to be injected between the lids three times a day, alternately with the sedative and mucilaginous collyrium before mentioned, so long as the suppuration continues, or the resolution is not complete.

At a later period, we may have to repress granulations by cauterizing again with nitrate of silver, or with acid nitrate of mercury, as M. Thiry directs, in those cases which resist the *lapis infernalis*.

It is never necessary, and it may be dangerous to endeavor to excite or recall the urethral discharge; this is a purely theoretical and speculative mode of treatment, which should be rejected in sound practice.

Copaiba, cubebs, and mercury, in whatever way employed, are always more injurious than useful.

II. An ophthalmia sometimes occurs during the course of urethral gonorrhoea, which is not a consequence of contagion or the application of gonorrhoeal matter to the eye, as in the form which I have just described.

¹ The editor feels compelled to differ from M. Ricord with regard to the abstraction of blood in gonorrhoeal ophthalmia. Bleeding from the arm is rarely, if ever, justifiable. It is of the utmost importance not to allow the strength of the patient to become depressed, especially when ulceration of the cornea has already commenced; and in the great majority of cases, quinine in full doses, porter, and a generous diet, are called for rather than general depletory measures. Nothing will so conduce to a loss of vision as a weak and debilitated condition of the system.

Locally, leeches or cups may be applied at the external canthus at the outset of the disease, and be repeated if necessary; but our chief reliance is to be placed in radiated incisions of the chemosed conjunctiva, according to Tyrrell's method, and, above all, in frequent lotions, to insure the constant removal of the pus as fast as it is secreted, and in the application, every few hours, of a solution of nitrate of silver, of the strength of five to ten grains to the ounce of water.—Ed.

This is the metastatic ophthalmia pointed out by Saint-Yves, and the sympathetic ophthalmia of most oculists, who assert that gonorrhœa of the eye is never the result of contagion.

This form also appears in connection with urethral gonorrhœa alone, during the course of the first week, oftener after the second week, or later, and sometimes towards the decline of this affection.

It is also more frequent in men than in women, for the reasons that I have given.

Young lymphatic subjects are most disposed to it. The ordinary causes of catarrhal ophthalmia help to develop it. A rheumatic diathesis, and the causes of rheumatism, also favor it, as they do gonorrhœal arthritis, with which it is often associated. I have seen a large number of patients who, every time they had urethral gonorrhœa, had also gonorrhœal ophthalmia. I attended a lawyer, who had double ophthalmia three times after as many attacks of gonorrhœa, which he contracted within the space of two years. I also had charge of a rich American, living at Paris, who was very subject to attacks of the gout, and every time that he caught a gonorrhœa, which he did four times, he was seized with gonorrhœal ophthalmia.

This variety of gonorrhœal ophthalmia has been considered a result of untimely treatment, and due to the sudden arrest or repercussion of a urethral gonorrhœa, by the too early administration of antibleorrhagics. This is a serious mistake; most patients have received no treatment at all when their eyes become affected. It is very rare for the discharge to stop previous to the appearance of the ophthalmia; it generally continues without modification; in some cases, however, revulsion appears to take place, and perhaps a little more frequently than in ophthalmia by contagion.

This form of gonorrhœal ophthalmia, which we may consider sympathetic in its character, may affect one eye alone, but generally the two eyes are seized at the same time, or successively. It passes from one eye to the other, often returns to the eye first affected, passes again to the second, and so on several times.

This disease generally commences on the eyeball. Not only the conjunctival but also the sclerotic vessels are injected; the eye appears more tense and more brilliant than natural; the cornea often projects a little more than usual, and the iris is a little farther off; in some cases we may satisfy ourselves that the aqueous humor is increased. At times there are symptoms of iritis, as a change of color in the iris, contraction of the pupil, which is rarely distorted, and more or less photophobia. The aqueous humor may be cloudy, lactescent, or flaky, owing to inflammation of the membrane of Descemet; and false membranes sometimes result, which may give rise to adhesions or pseudo-cataracts; but pustules on the iris, or what have been called condylomata of the iris, are never seen as in syphilitic iritis. A process takes place in the eye analogous to what we meet with in the synovial membranes, in cases of gonorrhœal arthritis, which, as I have said, sometimes accompanies this ophthalmia, or alternates with it.

The conjunctivitis is, however, almost always the main feature in

the case; it is sometimes very acute, and often prevents our appreciating the other symptoms of which I have just spoken; it is perhaps rather catarrhal than purulent, and has less tendency to form granulations than the first variety.

Sympathetic gonorrhœal ophthalmia, other things being equal, is more irregular in its course and more subject to relapses than the first form. It often changes its seat, which does not occur in the first form.

But laying aside the differences which I have just mentioned, this variety of gonorrhœal ophthalmia may present all the symptoms of ocular gonorrhœa from contagion; it may have the same course, occasion the same ravages, produce the same consequences, and have the same termination. The differential diagnosis may therefore present great difficulty, and it is not surprising that this form has been confounded with the preceding. It remains to be ascertained from clearly marked cases, if the discharge is equally contagious in the two forms.

At any rate, those authors who admit, as I do, these two species of gonorrhœal ophthalmia, acknowledge that the latter, which is more frequent than the former, is, other things being equal, much less severe.

The treatment is the same as for the former species. When the catarrhal or purulent state is slightly marked, there is less need of, and we may oftener omit cauterization than in ophthalmia by contagion. In this affection, especially when complicated with arthritis, the administration of tincture of colchicum (from three-fourths of a drachm to a drachm and a half a day), with nitrate of potassa (from a drachm and a half to three drachms) in a decoction of borage, has given me favorable results. It is taken for granted that this treatment should be employed concurrently with the other means on which I have already insisted, and without neglecting the various indications which may present themselves.—RICORD.

CHAPTER XV.

GONORRHŒAL RHEUMATISM.

BY P. RICORD.

HUNTER has not overlooked the articular rheumatism which may appear during the course of gonorrhœa; but he has not insisted on this complication, nor considered it as a frequent consequence of gonorrhœa.

To Swédiaur is due the credit of recognizing the connection between the cause and the effect, between urethral gonorrhœa and the variety of articular rheumatism which we are about to consider; it is to this author, in a word, that we are indebted for establishing the existence

of gonorrhœal arthritis, gonorrhœal rheumatism, arthrocele, the gonorrhœal tumor of the knee, or *gonocele*, as he called it.

All authors, who have written on venereal diseases since Swédiaur, have spoken of gonorrhœal rheumatism, and hence it is necessary for us to supply Hunter's deficiency in this respect.

We are, indeed, astonished, as Swédiaur was, that authors before his time said nothing of gonorrhœal rheumatism, which is, nevertheless, a not unfrequent complication of gonorrhœal urethritis. This must probably be ascribed to the difficulty of distinguishing it from common rheumatism; and to the fact that observers mistook it, when it supervened during the course of gonorrhœa, for a simple coincidence, as it may, in fact, often be.

However, if we seek for the true connection between gonorrhœa and articular rheumatism, we find patients, as Hunter did, who have articular rheumatism only when they have urethral gonorrhœa, and this, too, in many cases independently of any appreciable cause of rheumatism. As additional proof of the undoubted connection between these two affections, we often find the sympathetic form of gonorrhœal ophthalmia, of which I have spoken, coexisting or alternating with it.

There exists, then, a gonorrhœal rheumatism, or, if you like it better, gonorrhœa may be considered a special cause of rheumatism, on which it impresses a certain stamp, a certain physiognomy, although it does not always *subscribe its name*. Be that as it may, so-called gonorrhœal rheumatism, like sympathetic ophthalmia, appears only in connection with urethral gonorrhœa. The attempt recently made by M. Jarjavay, to attribute it also to balano-posthitis, has not been successful; and, in spite of aid from the pen of Dr. Foucard, urethritis remains the sole master of this complication.

Gonorrhœal arthritis is incomparably more frequent in men than in women, like gonorrhœal ophthalmia, in consequence of the much greater frequency of urethral gonorrhœa in the former.

Gonorrhœal arthritis has been attributed to the sudden suppression of the discharge, either occurring accidentally or produced artificially by the untimely use of the so-called antiblennorrhagics. In this case, it has been considered as the result of repercussion or metastasis. This much abused idea is not only erroneous in a nosological point of view, but is especially false and pernicious as regards the prophylaxis and therapeutics of gonorrhœal rheumatism.

I am now able to affirm that gonorrhœal rheumatism, like gonorrhœal ophthalmia and epididymitis, occur, in the great majority of cases, in individuals who have had no treatment at all, or who have employed only emollient remedies, and such antiphlogistics as are used, as patients say, to make the discharge easy. Doubtless, in some rarer cases, rheumatism supervenes during the use of the resins or injections; but then we should reasonably infer that these means have not prevented the articular affection, instead of concluding that they have produced it. This is so true that, in an enormous majority of cases, I do not hesitate to say in nine-tenths, the discharge continues unchanged when the arthritis supervenes. Doubtless, in some cases, the discharge may have diminished, or be on the point of stopping, or

even have already stopped, spontaneously, or under the influence of art, when the articulations become affected; but what conclusion shall we draw from these rare instances, if not that gonorrhœal arthritis may occur at any period of gonorrhœa, or that simple articular rheumatism may be mistaken for gonorrhœal arthritis?

Rheumatic complications rarely occur during the course of the first week of urethral gonorrhœa; the affection of the joints comes on later, and often not until after weeks or months, and sometimes towards the decline of the urethritis, as if the assistance of other causes were requisite for its production.

Indeed, though urethral gonorrhœa may often be the sole and sufficient cause of arthritis, every one who has investigated this subject must have recognized the influence of accessory causes. In this respect, we find that age has an influence as a predisposing cause, and that young subjects are much more frequently affected, and that not merely because they have gonorrhœa oftener than at a more advanced age.

Sex appears to have no other influence than that which results from the different degrees of facility in the two sexes for contracting urethral gonorrhœa, which is requisite for the appearance of the arthritis. Hereditary predisposition, which is less marked in rheumatism than in gout; cold; cold combined with moisture; chills during perspiration, etc.; and, in fine, all the causes of ordinary inflammation of the joints, may combine with urethral gonorrhœa, which is sometimes to be considered as the last blow of the whip, which sets the rheumatism in motion.

Gonorrhœal rheumatism generally appears suddenly, and without premonitory symptoms; sometimes it is preceded by chills and fever, or by vague, irregular, moving pains, which only become located afterwards.

Gonorrhœal rheumatism has a predilection for the femoro-tibial articulation, as all observers admit. Professor Cloquet used to think that, though this was true of men, it was not so in women; and that the coxo-femoral articulation was found most frequently affected in females. I have often convinced myself that M. Cloquet was deceived. But though the knee is most frequently affected, we must beware of believing that it is rare for the other articulations to be involved. From the numerous cases which have passed under my observation, both at the hospital and in my private practice, I have been able to satisfy myself that not a single articulation, great or small, escapes this disease; and I have come to this conclusion, too, from cases where I had the strongest reason to refer the articular affection to urethritis. To say, then, where articular rheumatism *may* have its seat, it would be necessary to enumerate all the articulations, except, however, the articulation of the heel, of which a certain syphilographer speaks, but which anatomists have not yet described! It is true that Swédiaur insisted on pain in the heel, but it is much rarer than he stated, and than the modern author, to whom I just alluded, seems to believe. Generally, the pain and swelling of this region are due to inflammation of the tibio-tarsal joint. The disease is sometimes situated in the

synovial bursa of the tendo-Achillis, of which I have shown instances at my clinique.

I have also met with patients who had very severe pains in the plantar region, apparently seated in the fasciæ. There is an instance of the kind in a young man that I am at present attending in the *Maison de Santé*, Rue Lourcine, who is also affected with double gonorrhœal ophthalmia of the sympathetic form, and with serous iritis.

Gonorrhœal arthritis more commonly affects only one joint, but it also very frequently attacks two or more at the same time, or successively. It may be said with truth, that in many cases several articulations are painful, but that only one is really affected with arthritis, and that when the disease acquires a certain degree of development in several joints, it continues a longer time, or remains permanently in one of them, when it is to give rise to other complications.

Gonorrhœal arthritis excites pains, which are sometimes very sharp, but which are rarely so *excruciating* as Swédiaur described them; and, all other things being equal, they are much less severe than those of ordinary acute articular rheumatism. The pain impedes the motion of the joint, or even renders it impossible; it is also increased on pressure; but, in the great majority of cases, this is not to be compared with what takes place in inflammatory arthritis of true rheumatic fever.

The affected joint swells sometimes to a large size; but if we seek to explain this increase of volume, which often supervenes unexpectedly, we soon satisfy ourselves, by examining the knee, for example, where the parts are most exposed, that there is no swelling of the articular extremities, nor of the ligaments of the articulation, nor of the soft parts about the joint, but an effusion into the synovial cavity; in short, a hydrarthrus. Fortunately, no one has had occasion to examine the pathological anatomy of this affection in its first stage; but the numerous cases which I have observed, and what most authors say of the frequency of synovial effusion, convince me that gonorrhœal arthritis is at first a subacute hydrarthrus. As I was just now saying, it is in the knee that we can best determine the seat and character of the disease at its commencement: the patella is raised and elevated above the articular surface of the femur; the depressions at its sides disappear, and give place to swellings, in which fluctuation is detected; the *fluctuating* freedom of motion of the patella, and the shock impressed upon it when the tumor is percussed, so characteristic of dropsy of the knee, are well marked. The synovial effusion is found to exist when the disease attacks other joints, and is recognized with more or less facility according to the joint affected.

Thus far, the articular swelling is generally unaccompanied by any increase of heat in the part, and the skin preserves its normal color. This state of things is so common, whatever some observers have asserted to the contrary, that we must confess that Swédiaur was right in considering this affection, which he called a gonocœle, as constituting a *white swelling*; although the English apply this term to all those diseases which were formerly included under the vulgar name of *white tumors*. This absence of redness and other external characters

of inflammation is so common and so characteristic, that, when the contrary occurs, we have reason to inquire if it is, indeed, nothing more than gonorrhoeal arthritis that we have in hand. However, either in the natural course of the disease, or in consequence of other predisposing causes, or from the development of complications, we find the other constituent parts of the joint successively involved, and showing symptoms of inflammation, just as we have inflammation of the testicle following gonorrhoeal epididymitis. In this case, swelling and heat are superadded; and we may find the small veins more or less prominent and injected, as in acute rheumatism.

If articular rheumatism progresses, extends, and acquires a high degree of intensity—if, in fine, it assumes an inflammatory type, and, so to speak, leaves its natural boundaries, the gonorrhoeal discharge may diminish or dry up, by a true process of revulsion; but most generally, as I have said, the morbid secretion from the urethra does not change in nature or in quantity, especially when the disease remains within its true limits.

Gonorrhoeal arthritis is generally apyretic; there is no premonitory fever, no concomitant sympathetic fever. Yet we sometimes meet with various degrees of febrile movement, rarely comparable, however, to that which occurs in true rheumatic fever; nothing, however, so far as I know, can prevent the latter from being developed during the course of urethritis.

I have already said that gonorrhoeal arthritis is a subacute disease, whose course, from the first, resembles chronic diseases of the joints, but which may assume the type of the most acute inflammations.¹

The duration of simple cases of gonorrhoeal rheumatism is from three to six weeks; but it is not uncommon to see it prolonged for months, or, at least, to see the synovial effusion remain a long time.

In the great majority of cases, gonorrhoeal rheumatism terminates in resolution; sometimes, as in other forms of rheumatism, it changes from one joint to another, or alternates with ophthalmia. Suppuration, the existence of which in common acute rheumatism has been called in question, is perhaps less doubtful in this variety; but it must be confessed, that it does not appear inherent in the disease; that it is an exception, which seems to be due to the accessory inflammation; it is as rare, or perhaps rarer, than suppuration of the tunica vaginalis in epididymitis, which is so often attended by the simple serous effusion of hydrocele. Doubtless gonorrhoeal arthritis may become, in certain cases (but always owing to certain predispositions or certain complications), the starting-point of serious articular diseases, and their consequences; but in that case, gonorrhoeal arthritis is not the only cause,

¹ In several instances, which were the most clearly marked cases possible of gonorrhoeal rheumatism, I have found symptoms of endocarditis and of effusions into the pericardium. I have shown several remarkable examples of this kind at my clinique.

During the course of urethral gonorrhoea, and coexisting with arthritis, I have seen symptoms of compression of the spinal marrow and of the brain, giving rise to paralysis (paraplegia or hemiplegia), which seemed to follow the course of the articular effusion, and be produced in the same way, and from their character I could not refer them to apoplexy, or ordinary meningitis.

any more than gonorrhœa is the cause of cancerous or tubercular sarcocele when the scrotal organs are involved.

In a diagnostic point of view, it has been asked if gonorrhœal arthritis is an effect of the syphilitic virus, proceeding from virulent gonorrhœa, and identical with chancre. Some authors have not hesitated to reply in the affirmative, and M. Beaumès, of Lyons, is half inclined to this opinion; but if there were no other symptoms to distinguish gonorrhœa from chancre, this one would suffice to show that they are perfectly distinct diseases. Is there any one at the present day who confounds, for a moment, secondary rheumatic pains, which are situated in the neighborhood of the joints, which are intermittent, nocturnal, and exasperated by heat; which diminish or cease under the influence of cold and motion, and do not increase but generally are entirely relieved by pressure; is there any one, I say, who confounds this affection with the disease which I have just described? Doubtless not, any more than any one could mistake them for tertiary osteocopic pains, periostosis and exostosis, unless blind adherence to a system prevent his seeing the prominent features of the two affections. Add to this also the fact that urethral chancres never occasion arthritis, unless they are complicated with gonorrhœa.

But is gonorrhœal arthritis due to a peculiar gonorrhœal virus? No; for in many, and even in most cases, I as well as others have seen the joints become affected in consequence of gonorrhœas contracted under the most simple circumstances, as from uterine catarrh, from the catamenial flux, and from the use of sounds or bougies; and such cases are just as severe, or even more severe, than those which are most clearly due to a more special cause.

But can gonorrhœal arthritis be distinguished from common rheumatism? Without doubt, you may make the diagnosis of Swédiaur's gonocèle, when during the course of urethral gonorrhœa, and without other appreciable cause, an articular affection supervenes of a chronic or subacute type; affecting a single articulation, and the knee by preference; attended by predominant hydrarthrus, with little or no fever, heat and redness of the skin, and especially when the patients tell you that they have such attacks only when they are affected with urethritis. But in a very large number of cases, in the absence or less decided development of undoubted pathognomonic symptoms, it is impossible to establish the difference, and to know whether you have a case of gonorrhœal arthritis, or of articular rheumatism, which is more or less acute, more or less general, and simply a concomitant of the gonorrhœa. The previous suppression of a gonorrhœal discharge which M. Bonnet, of Lyons,¹ and many other authors, have regarded as the most certain proof of the nature of the disease, is inadmissible, as I have said before, and would often lead to error. Let me add, however, that though the differential diagnosis is often difficult or even impossible, it is fortunately not necessary for treatment; for the latter is never directed against the pretended specific nature of the disease.

When the arthritis appears to be solely dependent upon the gonor-

¹ Treatise on Diseases of the Joints, Paris, 1845.

rhœa, and there exists no morbid lymphatic or scrofulous predisposition; when there is no complication; when, in fine, the disease is confined to its natural limits, the prognosis is not serious: it is an affection which terminates rapidly and favorably. But when the contrary is the case, the prognosis is drawn from the degree of severity of the other articular affections which complicate the gonorrhœal arthritis, and their gravity does not depend upon the coexisting gonorrhœa.

The treatment of gonorrhœal rheumatism presents nothing special. As in gonorrhœal ophthalmia, authors of the present day, who only write books after long observation, reject entirely the useless and injurious practice of recalling the discharge.

When the disease is subacute, or assumes at the outset the type of chronic affections, I apply immediately a large camphorated blister to the affected joint. This blister is afterwards dressed with opiated cerate, and is renewed once, twice, or three times, according to the effect produced. At the same time that blisters are applied, the patient should take every day from a drachm and a half to four drachms of nitrate of potassa, and three-fourths of a drachm to a drachm and a half of tincture of colchicum, in a decoction of borage. The affected joint is kept perfectly quiet, and the diet is proportioned to the severity of the arthritis. I have found this simple treatment to succeed the best and the most frequently. When the rheumatism assumes a more decided inflammatory course, we should resort to sedative and anti-phlogistic treatment; as leeches to the joint, poultices with the addition of laudanum, friction with ointments containing camphor or belladonna, saline purgatives, diluent drinks, and venesection if the pulse be full and hard, or especially if there be rheumatic fever. But as soon as the fever subsides, if the effusion remains, we must place our chief reliance on blisters again. Mercurial frictions, iodide of potassium, and all other means which are of use in ordinary diseases of the articulations, may be employed here, though the preceding gonorrhœa is not the chief indication for their use. With regard to antiblennorrhagics, copaiba, cubebs, etc., they have no influence on the arthritis, except that, by stopping the discharge, they remove a cause which might induce a relapse.—RICORD.

PART IV.

CHAPTER I.

OF CHANCER.

I HAVE been hitherto speaking of the effects of this poison when applied to a secreting surface, and without a cuticle; of the intention of nature in producing these effects; and of all the consequences, both real and supposed. I now mean to explain its effects when applied to a surface that is covered with a common cuticle, as the common skin of the body, which on such a surface will be found to be very different from those I have been describing. But I may be allowed here to remark that the penis, the common seat of a chancre, is, like every part of the body, liable to diseases of the ulcerative kind, and, from some circumstances, rather more so than other parts; for if attention is not paid to cleanliness, we have often excoriations, or superficial ulcers, from that cause; also, like almost every other part that has been injured, these parts, when once they have suffered from the venereal disease, are very liable to ulcerate anew. Since, then, this part is not exempted from the common diseases of the body, and as every disease in this part is suspected to be venereal, great attention is to be paid in forming our judgment of ulcers here.

Venereal ulcers commonly have one character, which, however, is not entirely peculiar to them, for many sores that have no disposition to heal (which is the case with a chancre), have so far the same character. A chancre has commonly a thickened base, and although in some the common inflammation spreads much farther, yet the specific is confined to this base. The future or consequent ulcers are commonly easily distinguished from the original, or venereal, which will be described hereafter.

It is an invariable effect that, when any part of an animal is irritated to a certain degree, it inflames and forms matter, the intention of which is to remove the irritating cause. This process is easily effected when it is on a surface whose nature is to secrete; but when on a surface whose nature is not to secrete, it then becomes more difficult, for another process must be set up, which is ulceration. This is not only the case in common irritations, but also in specific irritations from morbid poisons, as the venereal disease and smallpox. The variolous matter, as well as the venereal, produces ulcers on the skin; but

when it affects secreting surfaces, a diseased secretion is the consequence; and this is different in different parts; on the tongue, inside of the mouth, uvula, and tonsils, the coagulable lymph is thrown out in form of sloughs, somewhat similar to the putrid sore throat; but in the fauces, and all down the œsophagus, a thickish fluid, in appearance like matter, is secreted. When the irritation is applied to a surface whose cuticle is thin, and where there is a secretion naturally, as the glans penis, or inside of the prepuce, there it sometimes only irritates, so as to produce a diseased secretion, as was described; but this is not always the effect of such irritation on such surfaces. They are often irritated to ulceration, and produce a chancre.

The poison has in general either no disposition, or not sufficient powers to blister or excoriate the common skin; for if it did, the symptoms most probably would be at first nearly the same, if not exactly so, with a gonorrhœa; that is, a discharge of matter from a surface, without a cuticle, newly inflamed; for it is reasonable to suppose that the poison would produce on that excoriated surface a secretion of matter, which would be at first a gonorrhœa, and which very probably would afterwards fall into the second mode of action, or ulceration, and then become a chancre.

There are three ways in which chancres are produced; first, by the poison being inserted into a wound; secondly, by being applied to a non-secreting surface; and thirdly, by being applied to a common sore. To whichever of these three different surfaces it is applied, the pus produces its specific inflammation and ulceration, attended with a secretion of pus. The matter produced in consequence of those different modes of application is of the same nature with the matter applied, because the irritations are the same in both.

The poison much more readily contaminates if it is applied to a fresh wound than to an ulcer, in this resembling the inoculation of the smallpox. Whether there are any parts of the skin, or any other part of the body, more susceptible of this irritation than others, in consequence of local application, is not yet ascertained.

This form of the disease, like the first, or gonorrhœa, is generally caught on the parts of generation, in consequence of a connection between the sexes; but any part of the body may be affected by the application of venereal matter, especially if the cuticle is thin.

I have seen a chancre on the prolabium as broad as a sixpence caught, the person did not know how.¹ The penis, and particularly the prepuce, being the parts most commonly affected by this form of the disease, are so constricted as to suffer much from it, especially when they are very susceptible of such irritation; for the constriction alone produces many inconveniences, besides considerable pain, while under the disease, and in general retards the cure.

¹ That this sore was a chancre I made no doubt; for, besides its diseased appearance, he had a bubo forming in one of the glands under the lower jaw, on the same side.

It is most probable that his own fingers were the conveyers.

[These chancres are very common, and are generally produced otherwise than by the contact of dirty fingers. Their true nature has always been mistaken by Bielt, M. Cazenave, and others, who have confounded them with the secondary symptoms, which appear on the lips.—RICORD.]

The chancre is not so frequent an effect of the poison as the gonorrhœa, and I think very good reasons may be assigned for it, although there are more modes than one of catching it, as I just now mentioned; but the parts in two of them, to wit, the wound and the sore, are seldom in the way of being infected; therefore, when it is caught, it is commonly by the same mode of application with that of the gonorrhœa; but as the cuticle cannot be affected by this poison, this covering acting as a guard to the cutis, it is often prevented from coming in contact with it; and, indeed, it is almost surprising that the cutis should be affected by it where it has such a covering, excepting about the glans, the inside of the prepuce, or other parts of the body, where this covering is thin. The proportion which the cases of gonorrhœa bear to those of chancre is as four or five to one.

When it is caught in men, it is generally upon the frænum, glans penis, prepuce, or upon the common skin of the body of the penis, and sometimes on the forepart of the scrotum; but I think most frequently on the frænum, and in the angle between the penis and glans. Its affecting these parts arises from the manner in which it is caught, and not from any specific tendency in these parts to catch it more than others; and its affecting the frænum, &c., more frequently than the other parts of the penis, arises from the external form of this part, which is irregular, and allows the venereal matter to lie undisturbed in the chinks, by which means it has time to irritate and inflame the parts, and to produce suppurative and ulcerative inflammation in them. But as this matter is easily rubbed off from prominent parts by everything that touches them, it is a reason why such parts in general so often escape this disease.

The distance of time between its application and its effects upon the part is uncertain; but, upon the whole, it is rather longer in appearing than the gonorrhœa; however, this depends in some measure on the nature of the parts affected. If it be the frænum, or the termination of the prepuce into the glans, that is affected, the disease will in general appear earlier, these parts being more easily affected than either the glans, common skin of the penis, or scrotum; for, in some cases, where both the glans and prepuce were contaminated from the same application of the poison, it has appeared earlier on the prepuce.

I have known cases where the chancres have appeared twenty-four hours after the application of the matter, and others where it has been seven weeks. A remarkable case of this kind was in a gentleman who had not touched a woman for seven weeks, when a chancre appeared. That this was a venereal chancre was proved by his having had the lues venerea from it, and being under a necessity of taking mercury. An officer in the army had a chancre which appeared two months after he had had any connection with a woman. After the last connection, he marched above a hundred miles, when the chancre broke out, and only gave way to mercury.

This, like most other inflammations which terminate in ulcers, begins first with an itching in the part; if it is the glans that is inflamed, generally a small pimple appears full of matter, without much hardness or seeming inflammation, and with very little tumefaction, the

glans not being so readily tumefied from inflammation as many parts are, especially the prepuce; nor are the chancres attended with so much pain or inconvenience as those on the prepuce; but if upon the frænum, and more especially the prepuce, an inflammation more considerable than the former soon follows, or at least the effects of the inflammation are more extensive and visible. Those parts being composed of very loose cellular membrane, afford a ready passage for the extravasated juices, continued sympathy also more readily takes place in them. The itching is gradually changed to pain; the surface of the prepuce is in some cases excoriated, and afterwards ulcerates; in others, a small pimple or abscess appears, as on the glans, which forms an ulcer. A thickening of the part comes on, which, at first, and while of the true venereal kind, is very circumscribed, not diffusing itself gradually and imperceptibly into the surrounding parts, but terminating rather abruptly. Its base is hard, and the edges a little prominent. When it begins on the frænum, or near it, that part is very commonly wholly destroyed, or a hole is often ulcerated through it, which proves rather inconvenient in the cure, and in general it had better, in such cases, be divided at first.¹

If the venereal poison should be applied to the skin, where the cuticle is more dense than that of the glans penis or frænum, such as that upon the body of the penis, or forepart of the scrotum (parts which are very much exposed to the application of this matter), then it generally appears first in a pimple, which is commonly allowed to scab, owing to its being exposed to evaporation. The scab is generally rubbed off or pushed off, and one larger than the first forms. I think there is less inflammation attending these last than those on the frænum and prepuce, but more than those upon the glans.

When the disease is allowed to go on, so as to partake of the inflammation peculiar to the habit, it becomes, in many instances more diffused, and is often carried so far as to produce disagreeable symptoms, as phimosis, and sometimes paraphimosis, greatly retarding the cure; but still there is a hardness peculiar to this poison, surrounding the sores, especially those upon the prepuce.

When these ulcers are forming, and after they are formed, or in the state of inflammation, it is no uncommon thing for the urethra to sympathize with them, and give a tickling pain, especially in making water; but whether or not there is ever a discharge in the urethra from such a cause I will not determine; but if a discharge never takes place but when the disease really attacks the urethra, it would make us suppose that this sympathy is not really inflammatory; or if it is carried so far as to produce inflammation, yet that it is not of the specific kind. However, it is possible, in those cases where there is a gonorrhœa preceded by a chancre, that this gonorrhœa may arise from sympathy, and is not a disease proceeding from the original contamination, nor

¹ Added: "The original excoriation or wound may heal, although contaminated, and afterwards become a chancre. A gentleman, in the act of copulation, tore the root of his prepuce all round, but in two days the whole healed; but one part broke out afterwards into a chancre, with a hard base, which readily yielded to mercury. This is similar to what takes place in inoculation for the smallpox."—HOME.

from the matter of the chancre. That the sensation in the urethra, in those instances where there is no discharge, is from sympathy, and not from the urethra being attacked with the disease at the time that the matter laid the groundwork for the chancre, is evident from the following observation: I have seen it happen more than once, when the seat of the chancre had broke out a second time, and where no new or fresh infection had been caught, that the patient complained of the same tickling or slight pain in the urethra before any discharge had taken place in the beginning ulcerations. From the same connection of parts, I have seen a chancre coming upon the glans absolutely cure both a gleet and an irritation all along the passage of the urethra. So great was the previous irritation, in this case, that I suspected a stricture; but, on passing a bougie, found none.

In consequence of the urethra sympathizing with the chancre, the testicles and scrotum will farther sympathize with the urethra, and become affected. I have seen this sympathy extend over the whole pubes, and so strong, that touching the hairs gently on the pubes has given disagreeable sensations, and even pain.

In speaking of the local, or immediate effects of the venereal disease, I mentioned that they were seldom wholly specific, and that they partook both of the specific and the constitutional inflammation; and therefore it is always very necessary to pay some attention to the manner in which chancres first appear, and also to their progress, for they often explain the nature of the constitution at the time. If the inflammation spreads fast, and considerably, it shows a constitution more disposed to inflammation than natural. If the pain is great, it shows a strong disposition to irritation. It also sometimes happens that they begin very early to form sloughs; when this is the case, they have a strong tendency to mortification.

These additional symptoms mark the constitution and direct the future mode of treatment.

When there is a considerable loss of substance, either from sloughing or ulceration, a profuse bleeding is no uncommon circumstance, more especially if the ulcer is on the glans; for it would appear that the adhesive inflammation does not sufficiently take place there to unite the veins of the glans so as to prevent their cavity from being exposed, and the blood is allowed to escape from what is called the corpus spongiosum urethræ. The ulcers or sloughs often go as deep as the corpus cavernosum penis, where the same thing happens.

[G. G. B.—In this chapter the author has delineated, with his usual sagacity and precision, the true characters of a primary venereal sore. At least, his description applies to a large majority of such cases. It is the more valuable as the points of distinction are not drawn merely from obvious appearances, which, though they strike the eye, are scarcely communicable by language, but from the laws which govern the effects of the venereal virus, and the operation of which may be traced even where the appearances are dissimilar.

Two consequences follow the application of the venereal virus, induration and ulceration. These two consequences seem to be distinct and independent; since, though they generally exist in conjunc-

tion, they are sometimes found separate, one or the other of them being in some cases wanting. The induration, though not always so obvious as the ulceration, is on the whole more constant, more characteristic, more peculiar and distinct in its appearance. The author has therefore rightly directed the attention more especially to the thickening as a distinction of a primary venereal sore.

The description given of this peculiar thickening by the author can scarcely be improved. It is "very circumscribed, not diffusing itself gradually and imperceptibly into the surrounding parts, but terminating rather abruptly." It retains these characters through all its stages, though they may be sometimes partially obscured by other concomitant circumstances.

The thickening in general precedes the ulceration. The first effect of venereal contamination is to produce this peculiar change in the texture of the part; the second effect is to produce ulceration of the indurated portion. The character of primary venereal infection is essentially induration passing afterwards into ulceration. In the earliest stage of the existence of a chancre, this sequence is least discernible, there being frequently at that period superficial and incipient ulceration with very little apparent thickening. But in the progress of the disorder the two stages become in general very clearly distinguishable. If the sore be watched, it will be found that the thickening becomes daily more distinct and extensive, till the ulcer assumes the true venereal appearance of a sore situated on an indurated base. The induration everywhere encompasses the ulcer, being both beneath it and around it, forming as it were the bed of the sore, and at the same time encircling its margin, so as to connect it everywhere with the sound parts in the vicinity. In fact, it marks the part most recently contaminated, which has not yet passed into ulceration. In the progress of the case, the induration spreads first, so that no parts are involved in the ulcer until they have previously passed through this change of texture. A primary venereal sore is scarcely ever stationary. The ulcer itself may be stationary; but careful observation will detect a gradual increase of the thickened base, which proves, no less certainly than the enlargement of the ulceration itself, that the virus is steadily extending.

These observations will explain certain occasional variations in the aspect of venereal sores, which, though sufficiently intelligible when closely examined, are exceedingly perplexing to those who form their diagnosis merely from the obvious appearances.

It is not very uncommon that a primary venereal sore should assume the following characters. A portion of the prepuce, of about the size of a silver penny, shall become slightly thickened so as to lose its natural flexibility; and perhaps the surface shall be slightly excoriated. In the course of a few days, if the part is kept very clean, the excoriation shall in many cases disappear, but the hardness shall progressively increase, assuming a more defined character, and at last forming a large flat mass of the size of half a crown, so inflexible and rigid that the prepuce cannot be everted without difficulty. There shall be no tenderness, no inflammation, sometimes no ulceration at

all, at other times only a slight dark-colored excoriation of the surface. Yet the case shall be venereal. If the usual anti-venereal remedies are not employed, all doubts on this subject shall be removed at the end of eight or ten weeks by the appearance of distinct secondary symptoms.

In this case, the aspect of the part bears no obvious resemblance to that of a common chancre; yet the difference is more apparent than real. The venereal virus produces the usual induration; but, from the slowness of its progress and the absence of inflammation, the indurated portion does not pass into ulceration. With this single exception, the course of the disease is the same as that of an ordinary chancre. The increase of the hardness is progressive, until mercury is employed. As soon as the constitution is affected by the remedy, the thickened mass begins to diminish in size, and it gradually disappears from the circumference to the centre, exactly like the induration left by a chancre. As a still farther proof of the identity of the diseases, it may be stated that, notwithstanding the absence of ulceration, the contiguous surface is often similarly affected. A similar induration will be produced in the part of the glans with which the original tumor is in contact, or on the opposite nympha when this affection is situated on the nympha in the female.

Again, the deviation from the usual course may be of an opposite kind. The ulceration may be so rapid as to overtake the induration, and to destroy it as quickly as it is formed. Sores are frequently seen, especially on the external prepuce, which spread rapidly, sometimes by sloughing and sometimes by ulceration, with profuse discharge and some surrounding inflammation, but with little or no characteristic hardness. But the absence of this distinctive character of venereal sores is only accidental, and is occasioned by the rapid progress of the ulcer; for if the extension of the sore be checked by local means, which may often be effected, the surrounding induration shall appear, and shall become daily more palpable, until its farther progress is stopped by such remedies as act directly on the virus, and thus remove the cause from which it arises.

It is evident that these occasional variations do not affect the truth of the general position, that the natural result of venereal infection is induration passing into ulceration. But in the practical application of this principle as a criterion of the real nature of a sore, some circumstances must be taken into the account, which often modify the appearances and perplex the diagnosis.

The true venereal induration is "circumscribed, and terminates abruptly." But when much inflammation is present, these characters will not be discernible. The specific thickening will be confounded in the general thickening from inflammation, and will not be distinguishable from that which may attend an ordinary sore. Its existence cannot be distinctly and indubitably ascertained till the general inflammation is removed or palliated; and then, when the surrounding lymph is absorbed, there will still remain at the seat of the sore a hardened base and a hardened circumference, having a well-defined, abrupt margin.

Sores that are ill-conditioned may produce surrounding thickening, although free from all specific virus. If the surface is sloughy, the base may be indurated. In such cases, it is sometimes impossible to say at once with certainty whether the thickening is to be ascribed to the presence of the venereal virus, or is the mere consequence of the ill-conditioned state of the sore. The opinion should generally be suspended, and local means should be used for the removal of the slough. When this is effected, in common sores, the hardness which was produced by the irritation will disappear also; in venereal sores, notwithstanding a similar change of the surface has been produced, the induration will nevertheless remain and continue to spread, and ultimately the sore will again become foul and perhaps sloughy.

It is evident, therefore, that the distinction is to be drawn less from the appearance of the sore at any one moment than from its course and progress. Many circumstances may at one time confuse the appearance, and may deceive the surgeon; but it is scarcely possible that he can err if he watches the progress of the case, and uses means to obviate the causes of error. If the sore be venereal, he will be able to detect the changes which mark the contamination, viz., first, induration; and secondly, ulceration.

It is not meant that the other characters of venereal sores are to be disregarded in forming the diagnosis. The bright red areola which encircles them, the mode of extension which is equally in all directions, the disposition of the discharge from them to produce similar sores on the surfaces with which it is allowed to come in contact—these all form important distinctions, and should by no means be overlooked. But it often happens that these tests cannot be applied. The red areola is often obscured by surrounding inflammation, and altogether undistinguishable. Sores which are not venereal often spread regularly and evenly from a centre. Where attention is paid to cleanliness, and the discharge is not allowed to collect, no other sores will be produced, and the original chancre will remain single. The character and course of the induration form on the whole that criterion which is most certain and most generally observable.

But it must not be forgotten that there is a class of venereal sores to which the above description does not apply. In the sores usually called phagedenic, the progress of the ulcer is not preceded by the venereal induration, nor is such induration left after it is cicatrized. The other points of discrimination fail also. The extension is irregular, one edge generally spreading while another is healing; and the discharge does not infect the parts on which it is suffered to rest. Yet, undoubtedly, these sores are the consequence of impure connection, and are followed by secondary symptoms; and it is therefore difficult to deny their venereal origin, though the laws which they observe are very different from those which regulate the course of a common chancre. They are comparatively rare. The description of the author is applicable to forty-nine cases out of fifty; and its practical value is scarcely diminished by the occasional occurrence of phagedenic sores, which may be readily known by the characters which peculiarly

belong to them, and of which a more particular description will be given hereafter.—G. G. B.]

[RICORD.—A chancre is to syphilis what the bite of a mad dog is to hydrophobia. There can be no constitutional syphilis without this primary ulcer, except through hereditary transmission.

This proposition, it is seen, is contrary to Hunter's doctrine, and to the opinions of those who have followed the same track. I will not repeat the incontestable proof, which I have given elsewhere, that gonorrhœa and chancre are two distinct diseases, both in their cause and their effects. What I am to establish here is, that it is not true that chancres are limited to non-secreting surfaces, nor that the moment the syphilitic virus acts on a mucous membrane, its power of producing this ulcer is lost. Careful observation shows that certain accessory conditions are requisite for the deposited virus to produce its specific effect, and that these conditions are most readily met with on the skin and those mucous membranes, whose texture resembles the cutis. But though they are more rarely found on true mucous membranes, they nevertheless exist there in some cases; so that a syphilitic ulcer may be developed on any part of the body, which can be directly subjected to contagious influences. Hence, we meet with chancres, not only on all parts of the skin, without any exception, but also on the mucous membrane of the lower part of the rectum, throughout the whole extent of the vagina, on the neck of the uterus, even in the cavity of this organ, in the male and female urethra at different depths, in the cavity of the mouth, on the free margin of the lips, on their internal surface, on the internal surface of the cheeks, on the tongue, on the posterior and superior walls of the pharynx, and finally on the palpebral and ocular mucous membranes. In all the parts I have just mentioned, I have found regular chancres either in the living or dead subject; and authentic observations of such cases, collected at my clinique, have been published in my *Traité Pratique des Maladies Vénériennes*, and plates of them are given in my *Iconographie de l'Hôpital des Vénériens*.

For the syphilitic virus to act, it must be introduced under the epidermis or epithelium; it must find its way into an open follicle; be applied to a denuded or excoriated surface; enter some solution of continuity; and in this way reach the cellular tissue, the lymphatic vessels, or ganglia. But to infect any of these parts, the contagious pus must be left a certain time in contact with them, without undergoing alteration. The virus has generally no effect on tissues protected by a sound epidermis, or sound epithelium; but Hunter, perhaps, carried his confidence on this point too far; for though contagious pus may remain a long time on sound skin without affecting it, yet it often happens that it finally irritates it and excoriates it, as all acrid morbid secretions do, when spread over the cutis; and these excoriations, at first simple, may give place to true inoculations and successive chancres, such as are observed every day in patients who at first had only one. Contagious matter may also be deposited without effect upon any surface, whether of skin or mucous membrane, which is constantly bathed by a normal or morbid secretion, because it cannot reach the

surface through the secretion which covers and protects it, or because it is changed in its character, or washed away by this secretion. Place any part of the skin, or of the accessible mucous membranes, in such a physical condition that the virulent pus may penetrate within it, and remain there without undergoing alteration, and you will find no more privileged idiosyncrasies, such as some persons believe to exist, nor any invulnerable regions or tissues. The frænum, the free portion of the prepuce, and that part of its internal layer which extends upon the base of the glans, are more frequently affected with chancres, because these regions are most readily scratched or torn in sexual intercourse. The same is true of the fourchette and the neighborhood of the carunculæ myrtiformes in women; and in both sexes, it is true of those parts of the anus which are cut by the median line, and more particularly of the anterior portion of this orifice behind the raphé.

If Hunter had more carefully traced effects to their causes in the production of chancres, he would have found, as I have, that in most women who communicate gonorrhœas to men, nothing can be found, except a discharge, or that even this is wanting; and that when such women have chancres alone, the gonorrhœal discharges in the men either proceed from urethral chancres, or are the product of simple catarrhal inflammation, such as we know may be excited by pus from a chancre. If gonorrhœa were a specific effect of the virus which produces chancres, it would be as rare as it is common; for, without disrespect to Hunter's memory, gonorrhœal discharges constitute a larger proportion of venereal diseases than he stated. The large number of gonorrhœas is easily explained when we consider that all the causes of catarrhal inflammation may produce them, and that there is no reason why they may not be developed spontaneously. Moreover, in men of the world, who examine and take care of themselves, gonorrhœa is considerably more common than chancres; and the latter are found only in slightly increased numbers in the inferior classes, who are less careful and less cleanly. Who can tell the number of gonorrhœas contracted in unsuspected connections, or in connections which ought not to be suspected; gonorrhœas which are then said to be mild, and a mere over-excitement or irritation? But, with regard to chancres, is there any one who would consider them simple ulcers merely from the fact that he has no reason to suspect the good faith of her from whom he caught them?

I have proved, beyond a doubt, that virulent pus always acts in the same manner, wherever the primary ulcer is situated from which it was derived; that sexual intercourse is not necessary for it to produce its specific effect; and that there is no necessity for it to be recently secreted and still warm. In fact, chancres, wherever situated, furnish specific and contagious pus; the results of artificial inoculation are more certain than the effects of ordinary contagion; and virulent pus, which has been preserved a long time in tubes, may be inoculated like vaccine virus.

I have demonstrated, experimentally, that the formation of a chancre is not preceded by a period of incubation; and that the moment the

specific virus is placed in contact with the tissues in such a manner that infection is possible, a process is set up, which goes on incessantly, though with various degrees of regularity and rapidity in different cases, until it produces a perfect ulcer.

But since careful experiment does not allow us to admit a period of incubation, understood literally, for primary ulcers, we must also, of necessity, deny any relative periods of incubation inherent in the different tissues. Only there are parts of the body, which, from their organization, or from accessory causes, take on a morbid state more readily than others; and in which, for example, inflammation, ulceration, and suppuration progress more rapidly than elsewhere, though this difference in the rapidity with which the disease runs through its phases cannot be referred, as Hunter asserts, to different periods of incubation.

The apparently late appearance of some chancres is explained not only by the fact that their evolution is slower in some individuals and on some tissues, but also by various circumstances which come under our observation every day. Thus, many patients do not perceive the existence of a chancre until it has already acquired a considerable size, or has become painful; the chancres which others discover are successive chancres, which appear at various intervals after the primary infection and the development of the first ulcer, as results of subsequent inoculations by pus, which was furnished by the latter, and which waited for that condition of the neighboring parts, of which I have spoken above, before acting.

In the same way chancres may be produced by a secretion resembling a gonorrhoea, but furnished by a neighboring mucous membrane affected with deep-seated chancres, which sometimes excite a discharge subsequent to their development. If we recollect that virulent pus may be separated for a long time from the ulcer which produced it, without losing its contagious property, and that it may remain on the tissues without effect until they open a door to it, we shall easily account for those chancres which Hunter saw, and which appeared seven weeks after connection, and for the gonorrhoeas which preceded or followed them.

At any rate, it is allowable to say, contrary to what Hunter advances, that a chancre appears sooner after the application of the virus than true gonorrhoea does after the various causes to which it may be due.

But, for a proper appreciation of chancres, there are some important distinctions, which I think it desirable to mention in this place.

A chancre has no premonitory symptoms; the sensation of itching is not constant; it belongs rather to other diseases, and especially to herpetic and eczematous eruptions, which are so common on the genital organs, and which so often lead to mistakes. When itching occurs, it accompanies rather than precedes the first appearance of the chancre.

A chancre does not always commence in the same way. If the virulent pus is introduced beneath the epidermis or epithelium, it pro-

duces a pustule;¹ if it penetrates into the cellular tissue, into a lymphatic vessel, or ganglion, it causes inflammation and an abscess; but if, as most commonly occurs, the virus is applied to a denuded surface, a chancre is produced at the outset. Yet, whatever the first form and seat of a chancre may be, its subsequent course presents variations which it is very necessary to know, if you would avoid mistakes. In this respect, chancres should be divided into regular and irregular; the former are those whose course is not influenced by any local or constitutional complications; whilst the latter undergo important modifications, under the influence of different causes independent of the virus.

Chancres of all varieties have two periods, one of which may be called the specific or progressive period, the other the reparative period. The first commences the moment the virus acts, and continues so long as the ulceration, which may extend or remain stationary, furnishes inoculable pus; whilst the second is set up when the specific ulcer passes into the state of a simple ulcer, ceases to furnish contagious pus, and advances towards cicatrization.

A regular chancre, situated on the skin or mucous membranes, consists of an ulceration of small size, generally involving the whole thickness of the integument, and stopping at the subcutaneous or sub-mucous cellular tissue, which serves as its base. The form of a chancre is generally circular, but it may undergo many variations. When all points of the ulcer do not rest on homogeneous tissues, as happens when one part is situated on the internal surface of the base of the prepuce, and the rest on the corona glandis, it is no longer perfectly round. The same is true in cases where the chancre is formed in a previous solution of continuity of determined form, as in fissures of the prepuce, of the fourchette, anus, etc., and where it is developed in folds and depressions of the surface, which allow the neighboring parts to come in contact. Several chancres, by overlapping each other, may apparently lose their circular form. The base of a chancre is not always the seat of a decided and clearly marked thickening and engorgement, as Hunter's statement, and especially Mr. Babington's, would lead one to believe. There are many regular chancres whose base does not differ at all from the neighboring parts. The floor of a chancre is generally buffy, grayish, furrowed, and uneven; its edges, cut perpendicularly, more or less serrated, and presenting the same aspect as the base, are generally undermined and slightly everted, which gives the ulcer rather an infundibuliform shape; finally, the circumference of a chancre may be surrounded with a reddish areola of a more or less dusky and dark color, in proportion to the intensity of the inflammation of the surrounding parts, and especially in pro-

¹ It is curious to see M. Gibert, who denies the pustular development of chancres, thus express himself in his *Manual of Diseases of the Skin*: "Inoculation of the venereal virus, with a lancet, is followed by a pustule, which is succeeded by an ulcer having all the characters of a chancre."

It seems to me that, having once admitted this point, my learned confrère might have allowed that, in sexual or other intercourse, an analogous state of things might exist to that produced by the lancet; that is to say, that the pus might be insinuated under the epidermis or epithelium.

portion to the extent that the edges are affected and undermined. The pus secreted by chancres at this period is inconsistent, ichorous, and loaded with detritus of the tissues or of the blood; and, unless it is mixed with other normal or morbid secretions, it is alkaline and often contains animalcules. It continues fluid in those parts which are removed from the action of the air, as on most mucous membranes, but dries and forms crusts on almost all parts of the skin. It is quite abundant in some regions, as on the glans, prepuce, vulva, anus, etc., and if it remain on the part, it soon acquires odor; whilst in other places, it is less abundant and thicker, especially in the cavity of the mouth, where the saliva constantly washes away that portion of it which does not adhere to the ulceration.

The duration of the specific period of a chancre cannot be limited; but in the case of a regular chancre it may terminate in from two to four weeks, rarely sooner, and often later. Then, the reparative period is announced by the disappearance of the areola, if such existed; by the subsidence of its edges, whose margin assumes a pale grayish color, as they become adherent again and incline towards the floor of the ulcer, upon which they soon throw out concentric circles of cicatrization; the floor of the chancre becomes clean and covered with healthy granulations, whilst the base is absorbed and disappears.

A regular chancre is generally a mere local affection, and may pass through these different phases and terminate in a perfect cure, without any assistance from art.

But a chancre may deviate from its typical course, both in its progressive and reparative period, and present varieties, which, from being imperfectly studied or understood, have appeared to some observers to be entirely different affections.

Thus, a chancre is sometimes entirely superficial, and is masked by surrounding catarrhal inflammation, as in some cases of ulcerous balanitis and balano-posthitis, urethral and vaginal gonorrhœa, etc. But the three most important varieties of chancre are: 1. Indurated chancres; 2. Diphtheritic or pultaceous phagedenic chancres, and 3. Gangrenous phagedenic chancres from excess of inflammation.

First Variety; Indurated Chancres.—In this variety, the base of the chancre becomes thickened and indurated, as was first observed by Jean de Vigo, and as Hunter has well described it. This induration is generally clearly circumscribed, and, as Bell says, is not unlike half of a pea placed beneath the ulceration. When the induration is situated in lax cellular tissue, which yields equally in every direction, it is perfectly circular; but if it meets with tissues which are at all dense, or if it is compressed by the surrounding parts, it changes its form and may become elliptical or shaped like a crest, of which we see frequent instances in the furrow at the base of the glans. In all cases, the induration covers a larger surface than the ulceration above it, and when it raises the latter above the level of the surrounding parts, it gives rise to a variety of chancre called *ulcus elevatum*. The specific induration of a chancre gives to the touch a peculiar and characteristic elastic feel, which is easily recognized when once felt, and which can rarely be mistaken for hard œdematous or inodular tissue; the two

states which resemble it the most. This induration never, in any case, precedes the chancre, as Mr. Babington says it does; nay, more, it rarely supervenes till the fifth day after infection, or later. Observers have been deceived on this point in several ways; thus, infection sometimes takes place in a follicle, whose orifice closes or bears merely a minute ulceration, so that nothing is discovered till the induration supervenes; again, the virus may act in the cellular tissue, in a lymphatic vessel, or ganglion, after the ulcer or solution of continuity, which served as its door of entrance, has cicatrized; and in this case, as I have elsewhere said, an indurated shell or callous cyst forms around the infected point; finally, new ulcerations sometimes supervene on indurations remaining after the cicatrization of previous chancres.

In many cases, the induration of the base and edges of the ulcer seems to limit its extent; but it sometimes happens that the chancre extends in consequence of excessive induration, and especially in consequence of the rapidity with which the latter takes place. The tissues, which are in this case involved in a kind of plastic apoplexy, are rapidly destroyed; the circulation is impeded or completely suspended, by obliteration of the vessels, and gangrene supervenes. Mortification commences here in the centre of the indurated parts; it is, so to speak, molecular mortification, and never occasions extended eschars, except in another variety, which we shall consider hereafter.

The induration almost always occupies the base of the ulcer, and involves its edges, which are no longer undermined; and these, from their outline, may give the chancre various forms, of which it has been attempted to make varieties, such as the fluted chancre, &c. In some rarer cases, the edges are the only seat of the induration, and consequently a ring is formed, which Wallace designated as primary annular syphilis. But in all these varieties, an indurated chancre is generally indolent, has little tendency to become complicated by inflammation, and suppurates very little.

Common inflammation often masks the specific induration, so as to deceive you, and make you think that inflammatory and phagedenic chancres may be followed by constitutional infection, like indurated chancres. I have myself committed this error, which is easily made when the patients are not observed at the outset of the disease; and I have detailed several instances of it in my *Iconographie de l'Hôpital des Vénériens*. But, in these cases, induration precedes the inflammation and phagedena; for, when there has been no induration, there is no constitutional infection. Moreover, when a chancre becomes indurated, or is to be followed by infection of the system, whether the induration be strongly or feebly marked, it is inevitably attended with engorgement of the neighboring lymphatic ganglia in anatomical connection with it. The ganglia in this case, do not acquire a large size; they generally remain indolent, and never suppurate, or at least never specifically.

Acetate of lead, chromate of potash, corrosive sublimate, nitric acid, nitrate of silver, &c., may, for a time, produce artificial indurations, which sometimes counterfeit specific indurations to perfection; but the symptomatic swelling of the glands is in that case wanting, as also

constitutional symptoms at a later period. These artificial indurations are also of much shorter duration than specific induration, unless they are kept up by a continuance of the causes which produced them.

The specific induration of a chancre is formed of fibro-plastic tissue, as has been shown in England by my friend and pupil, Mr. William Acton, and in France by M. Marchal (de Calvi), and by my learned friend, the skilful microscopist, M. Lebert.

Second Variety; Pultaceous or Diphtheritic Phagedenic Chancres.—In this second variety, the characteristic induration which we have just discussed is entirely wanting, or is rapidly destroyed where it once existed; and if a thickening of the base and edges of the ulcer be sometimes observed, it consists only of unhealthy œdema, or phlegmonous engorgement.

The ulcers which belong to this variety, and which constitute phagedenic ulcers *par excellence* (corroding ulcers), are inclined to extend in surface rather than in depth; the skin, mucous membranes, and the submucous and subcutaneous cellular tissues, opposing their progress much less than the fascial and muscular tissues. These chancres may retain their circular form, but generally they plough up the tissues irregularly, become serpiginous, and constitute a very remarkable variety, which is quite distinct from all others. In this case, they may at the same time enlarge at all points of their circumference, but they are more inclined to extend towards those parts which are the most depending, and which thus favor infiltration of the pus into the subcutaneous or submucous cellular tissue.

In many cases, also, these chancres present a striking analogy to the different varieties of hospital gangrene. Their floor is generally uneven and covered with a grayish coating, a kind of false membrane, that might be mistaken for a gangrenous eschar, but which, in reality, is only the result of a peculiar diphtheritic secretion. In some cases, we find only pultaceous matter irregularly distributed over the surface, and granulations escaping here and there, which are many times destroyed by ecchymosis, hemorrhage, and gangrene, before they lead to cicatrization.

In serpiginous chancres, cicatrization does not take place as in the other varieties. This is one of the characteristics of this form, which would almost lead one to believe that it recognizes a special cause, different from that of the other varieties. In fact, cicatrization in this form commences at a few points near the centre of the ulcer, whilst ulceration goes on at the circumference. In some cases, the edges heal on one side, and fresh ulcerations appear on the other, leaving behind them cicatrices which they respect more than they do the sound tissues.

The edges of these ulcers are generally very thin, irregularly cut and perforated, especially in those parts where they are the most undermined. They lose their lining cellular tissue, and turn back on the skin, or else are depressed on that portion of the ulcer which they overlap; but sometimes they are thickened by œdema or inflammation. Their color is generally a dusky violet, like that of the areola which surrounds them.

The chancres of which we are now speaking are almost always very irritable, and are generally attended with very severe pain and inflammation. They suppurate freely, their duration is indefinite, and they may last for months or years. I have seen one which had lasted seven years, and *which still furnished inoculable pus*. Yet surely the patient had had time enough to *become syphilized*.

These chancres are kept up and extended, not only by the progress of the specific ulceration, but also by successive inoculations from one place to another; and, up to the present day, *their number has been found illimitable*.

Phagedenic chancres may be considered as ulcerations of an acute type, with reference to the successive parts which they involve, but as a chronic affection when we regard their total duration, especially in the serpiginous variety.

Third Variety; Inflammatory or Gangrenous Phagedenic Chancres.—In some cases, chancres excite, or are complicated with, very acute inflammation, which may terminate in gangrene. Here the specific ulcer is generally destroyed by the rapid progress of the ulceration, and on the fall of the eschar or sphacelus, only a simple ulcer remains. The tissues on which it is situated may continue engorged from œdema or phlegmonous inflammation, but they present none of the characters of induration which belong to the first variety.

The three varieties of chancre which I have described often exist alone, or are variously combined. The reparative period of a chancre has also its irregularities, in the same way that the specific period has varieties and numerous intervening shades of difference. The reparative process may be only partial: that is to say, confined either to a part of the circumference or to a part of the floor of the chancre. One-third or one-half of the chancre may cicatrize, while the rest is still in the progressive stage; and in this case, it is not uncommon for a relapse to take place, and the ulceration to regain those portions which were beginning to heal, as takes place in serpiginous chancres. But there are other varieties in this stage, which some observers have endeavored to make distinct species of ulceration. Thus, the floor of the ulcer is sometimes elevated above the level of its edges, and presents a granular convex surface, such as is often seen on the neck of the uterus, and which is still, in some countries, referred to a variety of the *ulcus elevatum*. At other times, true vegetations, more or less perfectly organized, succeed the granulations, when not repressed at the proper time, giving rise to what has been called a fungous or vegetating chancre. Finally, a chancre may cicatrize and the induration remain, or else the ulcer may undergo a transformation *in situ*, pass into the state of a secondary symptom, and assume the characters of secondary ulcers, and more particularly the characters of mucous papules or tubercles.

Without entering into other considerations, which would prolong this note to too great an extent, it is easily seen from the preceding remarks, that those symptoms which have hitherto been relied on to establish the diagnosis of chancre, have only a relative value, and that we should often be deceived, if we always tried to distinguish a chan-

cre by the presence of an indurated base, as Hunter directs, and as Mr. Babington seems to assert even more decidedly.—RICORD.]

[EDITOR.—Some chancres are of a purely local nature. Their action and influence are confined to their immediate neighborhood. They respect the general constitution, never give rise to syphilitic symptoms in distant parts of the body, and when once healed, no after-consequences are to be feared, the system remaining in the same condition as before their appearance.

Other chancres, on the contrary, have a far different prognosis. In the course of a few weeks or months, they are invariably followed by constitutional symptoms, which may invade all the tissues of the body. The constitution has become infected, and syphilitic phenomena may manifest themselves years after the primary sore has healed.

All other distinctions between different varieties of chancre are of comparatively minor importance to this. Constitutional infection or constitutional immunity are characteristics which overshadow all others. Founded on this basis, we have the classification of chancres into non-infecting and infecting chancres; the former being also called simple or soft chancres, and the latter hard or indurated chancres.

SIMPLE OR NON-INFECTING CHANCRES.

Frequency.—This is by far the most frequent variety of chancre met with in practice. M. Puche, the associate of Ricord at the *Hôpital du Midi*, found the following proportion in ten thousand chancres, observed during a period of twelve years:—

| | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|--------|
| Indurated chancres | . | . | . | . | . | . | . | . | 1,955 |
| Simple chancres | . | . | . | . | . | . | . | . | 8,045 |
| | | | | | | | | | <hr/> |
| Total, | | | | | | | | | 10,000 |

Thus we have nearly four simple chancres to one indurated chancre. The records of other observers vary somewhat from this, but they all concur in showing the much greater frequency of the simple ulcer. This fact is due to two causes—

1. A simple chancre is the most fruitful source of the syphilitic virus. It not only secretes such virus in larger quantity and for a longer time than the indurated chancre, but its secretion is also more contagious.

2. A simple chancre is no protection against subsequent contagion, whilst an indurated chancre, as a general rule, is never met with but once in the same subject.

Seat.—It has been stated on a previous page of this work that chancres may be met with on any part of the integument or accessible portions of the mucous membranes of the body. This is absolutely true of indurated chancres, but Ricord has recently called attention to a most remarkable and singular exception to this law in the case of simple chancres. He states that, in the whole course of his long and extensive practice, *he has never met*

with a soft chancre on the face or head. Hundreds of chancres in this situation have come under his observation, but they have all been indurated. MM. Puche and Cullerier also testify to the immunity of the cephalic region from soft chancres, judging from their own experience. Moreover, a careful search of all the writings on syphilis has produced but two instances of a simple chancre situated above the neck, and these of such a doubtful character as to lead to a suspicion of the accuracy of their observation.

Ricord states that he does not deny the possibility of the existence of a soft chancre upon the head. On the contrary, he believes that such ought to be met with. All that he asserts is, that, as yet, no well established instance of a soft cephalic chancre has ever been observed. The explanation of this exemption of the head from soft chancres is, at the present time, difficult, if not impossible. The fact, if established by farther observation, is one of the greatest obstacles to the admission of two kinds of syphilitic virus as the origin of the two kinds of chancre.

Characteristics.—The most important point to be observed in the examination of a chancre is the condition of its base. The base of simple chancres is characterized by a softness and suppleness which is almost equal to that of the sound tissues. In many cases, however, the tissues surrounding the chancre become the seat of inflammatory engorgement, and present a hardness to the touch, which, however, is sufficiently distinct from the specific induration of infecting chancres to be considered hereafter. This point has also already been noticed by M. Ricord on page 296.

A practised eye will often recognize a simple chancre at a glance by its edges, which are perpendicular and sharply cut, and its floor, which is irregular as if worm-eaten. These characteristics will be better understood after describing the opposite features of an indurated chancre.

The power of contagion of a simple chancre is much superior to that of an indurated one. Neighboring parts are inoculated by its virus with great facility. Hence it is that we much more frequently meet with several soft chancres grouped together than a single one alone; and the number of the ulcers is therefore of some assistance in forming our diagnosis.

The secretion of virulent pus is much more abundant from a simple than from an indurated chancre, and also preserves its contagious properties for a greater length of time. Of the two periods of all chancres, already described on page 294, the first or specific period, in the case of simple chancres, absorbs nearly the whole duration of the ulcer. The sore may even, to all appearance, be nearly healed, the reparative process having already been set up around its circumference, and yet a few points at the centre may still furnish pus which is capable of inoculation. In the strength of its powers of contagion, the simple chancre forms a striking contrast with the indurated chancre.

Simple chancres are unlimited in their duration. In many cases, indeed, cicatrization takes place in the course of a few weeks; but it is not unusual to find the ulcer persist for a much longer period. This variety of chancre

is also especially destructive in its tendency, often involving the tissues over a considerable extent of surface. It constitutes that form of primary ulcer which is especially liable to take on phagedenic ulceration, resulting in horrible mutilations, such as loss of the penis or labia, deep and extensive cavernous ulcers in the groins, etc. The occurrence of phagedena, however, is not exclusively confined to simple chancres; it is also met with, though much more rarely, in connection with indurated chancres, but in this case it is less violent, and more amenable to treatment.

The condition of the lymphatic ganglia in the groins affords valuable aid in assisting our diagnosis between simple and indurated chancres, the effect of each of these varieties upon these ganglia being peculiar to itself. This point will be fully considered hereafter in connection with buboes. At present, it is sufficient to state that, in the case of a simple chancre, the inguinal ganglia are either entirely unaffected, or, if involved, acute inflammation attacks a single ganglion, which exhibits a strong tendency to suppurate, and, in most cases, gives exit to pus which is capable of inoculation.

Origin.—It was formerly supposed that the syphilitic virus was a unit, and that the fact that one person has a simple chancre while another has an indurated one was due to individual idiosyncrasy, the exciting cause being the same in both cases. Carmichael, in 1815, was one of the first to call this idea in question, and he maintained that there were four kinds of syphilitic virus, each of which was productive of a train of constitutional symptoms peculiar to itself. Carmichael's views, however, were soon shown to be erroneous, and they have long since been abandoned and well nigh forgotten. But the marked difference in the form and constitutional effect of the simple and infecting chancres has again of late years excited suspicion that the cause upon which they depend is not identical.

To determine this point, observers have directed their attention to the *origin* of chancres, and endeavored, in every possible case, to compare a chancre with the ulcer from which it was derived, in order to ascertain if a simple chancre always produces a simple chancre and an indurated chancre an indurated one. If this be so, we can no longer hesitate to admit that the virus in the two cases is different. Let us see what has been ascertained on this point with regard to simple chancres.

Late experiments in syphilization upon persons previously unaffected by syphilis, though deserving of the highest reprobation in a moral point of view, might have done much to elucidate this question, if the character of the ulcer from which the pus was taken and the character of the sore produced had always been accurately determined. But the absence of these data in the majority of cases renders these experiments comparatively unavailable to science. In the few instances, however, in which this oversight has not been committed, pus from a simple chancre inoculated upon a sound person has always produced a simple chancre.

But a more fruitful field for this investigation is to be found in the comparison of the chancres of individuals who infect each other in ordinary

sexual intercourse, avoiding, of course, with great care, all the sources of error to which such a comparison is liable.

A sufficient time has not yet elapsed to collect a large number of cases. Ricord states that, judging from recollection, in all cases, when he has been able to trace a chancre to its source, he has always found the two of the same variety. M. Clerc reports five cases of simple chancre derived from simple chancres. In thirty-nine cases of simple chancre, MM. Fournier and Caby have been able to examine the ulcers from which they were derived, and in every instance found that they also were simple chancres.

These facts would appear to be sufficient to authorize the following proposition: *A simple chancre is derived from a simple chancre, and can only give rise to a simple chancre.*

INFECTING OR INDURATED CHANCER.

This variety of chancre is confined exclusively to man. The experiments of Auzias-Turenne, Diday, and others, would seem to show that simple chancres may be communicated to the lower animals, but all attempts to inoculate animals from indurated chancres have been unsuccessful, and no evidence of constitutional syphilis has ever been found upon them.

Evolution.—The development of an indurated chancre is always slow and insidious. The ulcer is formed, and may even acquire a considerable size, without exciting sufficient pain or tenderness to attract the attention of the patient. Even if noticed, it often passes for a mere excoriation, unworthy of being presented to a surgeon. But, in very many cases, the patient is entirely ignorant of its existence. The appearance of secondary symptoms may be the first thing which leads him to seek advice, and the existence of his primary sore be first made known to him after the examination of his surgeon. I might cite many facts to prove the truth of this assertion, and to show how careful we should be in admitting that any case of constitutional syphilis has not been preceded by a primary sore.

Symptoms.—The appearance of an indurated chancre is peculiar. Its surface is smoother, less irregular and worm-eaten than the surface of a simple chancre. In its period of progress, the floor of the ulcer has a grayish and lardaceous look, but is still quite regular, and is sometimes smooth enough to form a reflecting surface to the light. Its edges are generally smooth and shiny as if coated with varnish, whilst its centre presents a more sombre and uniform grayish tint. There is another important distinction between simple and indurated chancres to be found in the edges of the ulcers. The edges of a simple chancre are abrupt and perpendicular, as if *punched out*; the edges of an indurated chancre are sloping as if the sore had been *scooped out*. In the former, they are usually undermined, in the latter adherent.

The characteristic induration of an infecting chancre has already been described by Ricord on page 295, but a few points require farther notice.

This induration is clearly and abruptly defined, the tissues around it preserving their normal softness, unless in the exceptional cases where simple inflammation of the part supervenes. To the touch it has an elastic, cartilaginous feel, which is quite distinct from the hardness of inflammatory engorgement. It may be difficult to describe in words the difference in the sensations produced by the two, but they are none the less distinct, and not easily mistaken for each other, when once felt.

In some cases the induration, instead of penetrating into the tissues beneath the chancre, is superficial, and merely lines its under surface; so that if you grasp the ulcer between two fingers, you do not feel a mass like a split pea—to which Bell compares it—but, as it were, a layer of parchment underlying the chancre. Ricord has given to this form of induration the name of *parchment induration*. It is often so superficial and slightly marked as to escape notice, unless the surgeon looks for it and his fingers have been educated to detect it.

Specific induration of a chancre usually first appears during the latter part of the first week following the infecting coitus. It is fully formed in the course of the second week. Such is the general rule. Ricord states that he has never met with it before the third day after coitus, and he believes that it is never manifest before this time. It sometimes appears late, but it is very rare indeed for it to be formed as late as during the third week. If, therefore, induration is to take place at all, it does so during a very early period of the existence of a chancre.

This valuable symptom of an infecting chancre is not equally well marked in all parts of the body. It appears to be best developed in those regions which are the most richly supplied with lymphatic vessels, as in the corona glandis, upon the lips, etc.; and in such situations it is also the most persistent. On the contrary, there are certain regions where it is very slightly developed, very difficult to detect, and where it disappears very soon. Thus, on the mucous membrane of the vagina, upon the carunculæ myrtiformes, at the anus, etc., an infecting chancre never takes on that thick induration which so markedly characterizes it in the corona glandis. When thus situated, the induration is usually of the parchment form, occupying the surface alone, and is often so slightly marked as to be with difficulty detected by a novice, although readily appreciated by a practised hand. It is to be recollected also that in those regions in which it assumes but a slight development it is also very transient. A few days are sometimes sufficient for its disappearance, which may even take place before the complete cicatrization of the ulcer. These difficulties in detecting the induration of an infecting chancre are confessedly great, but they are not insurmountable, especially when aided by other symptoms, of which we shall speak hereafter.

It has been asserted by some authors that an infecting chancre does not become indurated in women. This is an error. At the vulva, upon the nymphæ, the clitoris and the urethra, specific induration is well marked. Upon the labia majora, an infecting chancre is as strongly indurated as any

infecting chancre in man. It is true that within the opening of the vulva, upon the vaginal walls, induration is but slight, rapidly disappears, and is with difficulty appreciated, but its existence, in most cases, cannot be called in question.

Another difference between simple and indurated chancres is in the amount of their suppuration. The former suppurate freely, and are the most fruitful source of virulent pus. Indurated chancres, on the contrary, suppurate very little, and furnish only a small amount of watery secretion, which is generally thin and sanious.

Simple chancres are generally found in groups at the outset, or subsequently become multiplied by successive inoculations at various points in the neighborhood. In the great majority of cases, there is only one indurated chancre; or if more than one exist at the outset, it is very rare to find others springing up around it by a series of successive inoculations. It is only during the earliest days of its existence that an indurated chancre can reproduce itself upon the same individual. At a later period it gives rise to a different kind of ulcer, if to any; but of this, more hereafter.

Whilst the simple chancre has a decided tendency to spread and encroach on the surrounding tissues, an indurated chancre soon attains its maximum development, and appears to be limited by the deposition of plastic lymph which takes place beneath and around it. It is very rare to find it taking on phagedenic ulceration; so rare, indeed, that it is a commonly received opinion that phagedena is a protection against constitutional infection. This, however, is a mistake. The local consequences of phagedena are not a protection against infection when the original chancre is an infecting one; and, indeed, under these circumstances, the gravity of the constitutional symptoms is proportionately great. Phagedena is only a complication of chancres, and as such may attack both varieties, though, for some unknown cause, it usually affects only the simple form. When it involves an indurated chancre, it is generally much more limited in extent, and more amenable to treatment.

Course and Termination.—An indurated chancre runs through its different phases with comparative rapidity, and, as a general rule, is sooner healed than a simple chancre. Throughout its whole course, it excites but little pain and uneasiness, so that it is often unnoticed by the patient. Cicatrization finally takes place as in the simple chancre, from the circumference towards the centre. The infecting chancre is alone capable of being transformed into a mucous tubercle, although a simple chancre, in the process of cicatrization, may become covered with luxuriant granulations which closely resemble this secondary symptom. The true transformation of an infecting chancre into a mucous tubercle will be described hereafter.

As a general rule, the induration remains for some time after an infecting chancre has healed. Its elasticity gradually decreases; it becomes soft and finally disappears entirely, sometimes leaving behind it a slightly depressed cicatrix of a deep violet color. The length of time after the chancre has healed, during which the induration may be detected, is extremely variable,

depending apparently upon its situation. It has already been remarked that it lasts the longest in those regions where it is best developed. This rule, however, is not invariable, even in the parchment-form of induration. In ordinary cases, we can often perceive it for six or eight months after the healing of the primary sore. Ricord states that in one case he observed it as late as the thirtieth year. In a few exceptional cases, after having nearly or quite disappeared, it is suddenly re-developed.

The condition of the neighboring lymphatic vessels and ganglia should always be examined in forming our diagnosis between an infecting and simple chancre. The effect of an indurated chancre upon these is peculiar and constant, and will be described in connection with buboes.

Prognosis.—An indurated chancre is an infecting chancre. It is no longer a mere local affection; but the first manifestation of a constitutional disease, the prelude of constitutional syphilis. Hence it is more proper to consider the induration as the consequence, than the origin of constitutional infection. The induration underlying the base of a chancre is the effect of the reaction of the poison on the general system; it is, indeed, the first of a train of secondary symptoms.

Does not occur twice in the same person.—An indurated chancre gives rise to a diathesis, or, to a peculiar state of the system as a consequence of infection, and comes under the general law of virulent affections, in accordance with which they are not repeated twice in the same individual. It is in accordance with the same law, that one vaccination prevents the vaccine virus from taking again, at least for a length of time. Thus one attack of smallpox is a preventive against another, and measles and scarlatina rarely occur twice. The same is true of indurated chancres. A person who has had one never has another. The syphilitic diathesis is never doubled any more than any other morbid diathesis; at least there is no unquestionable instance of such repetition on record. Ricord has never met with such a case, and though several have been reported by other writers on syphilis, yet they all admit of doubt as to the correctness of their observation. Owing to the liability to error in forming the diagnosis of an indurated chancre, it is important that any case, intended to prove the occurrence a second time of an indurated chancre in the same person, should show that it was followed in each instance by the usual train of constitutional phenomena.

Although clinical facts such as these are at present wanting, yet we are perhaps not justified in denying the *possibility* of their occurrence. It is well established that the modification which the system receives from typhoid and the eruptive fevers may die out in time, and a person undergo a second attack. Revaccinations are also successful in some instances. Analogy would therefore lead us to believe that the syphilitic diathesis may also disappear, at least, in some fortunate cases, and then a second indurated chancre and its consecutive symptoms would be possible; but, as yet, we have no proof that this ever occurs. It is to be hoped, however, that farther obser-

rations will establish the contrary, for, if syphilis can occur twice in the same person, it follows that a first infection may be exhausted; but it is generally believed, at the present day, that, though this fearful disease may be cured in its manifestations, its tendency can never be eradicated. What a consolation, then, would it be to humanity to be able to say that constitutional syphilis may be perfectly cured! The question may be asked, however, whether, if the syphilitic diathesis never becomes entirely extinct, it may not be so far subdued as to exercise only a preservative influence against a second infection, but of this we have no proof. Constitutional symptoms often appear after the diathesis has been latent for many years.

Before leaving this subject, it is desirable to point out some of the sources of error, to which investigations as to the possibility of a second attack of constitutional syphilis are liable. In the first place, the testimony of patients, or even of most physicians, as to an anterior infection, cannot be accepted; owing to the imperfect ideas which generally prevail on this subject. One practitioner regards every venereal symptom, including gonorrhœa, vegetations, and simple chancres, as constitutional effects of the virus. Another is unable to distinguish between a true syphilitic eruption and one produced by the use of cubebs or copaiba.

But suppose that we ourselves are twice called to attend the same patient, at a considerable interval of time, and in each instance think that we recognize an indurated chancre. There are still certain ways in which we may deceive ourselves. Are we sure that the constitution became infected from the first chancre? If constitutional symptoms followed it, there can be no doubt. If nothing was observed except the chancre, and a mercurial course was administered, the case is less certain. It is not always easy to determine whether a chancre is indurated or not, and we may have been mistaken in our diagnosis.

Again, there is another source of error. An indurated chancre may heal, leaving behind it its induration, and some months or years after, a second chancre appear on the cicatrix of the first. The indurated base of the first chancre appears to belong to the second chancre, which, after all, may be only a simple ulcer. Nay, more, even if the induration of a first chancre has entirely disappeared, a second chancre, occurring in the same spot, may be sufficient to cause its reappearance.

Finally, suppose that constitutional symptoms follow two chancres, occurring at a considerable interval of time, those which succeed the second chancre may be entirely independent of it, and due to the infection produced by the first. Fortunately the manifestations of constitutional syphilis affect different tissues, and assume different forms, according to the time which has elapsed since infection, so that the character of the symptom will always determine whether it is due to a recent or remote chancre.

Origin.—We have already seen that there is ground for believing that a simple chancre is always derived from, and can only give rise to, a simple

chancre. It remains to examine the laws of transmission of the indurated or infecting chancre. For reasons which will be evident hereafter, it is desirable, in the first place, to pursue this investigation upon persons who are exempt from any previous syphilitic infection; and in such cases, we arrive at a law similar to the one which prevails in the case of simple chancres. In fifty-nine cases, collected by Ricord's Interne, M. Fournier, an indurated chancre was, in every instance, derived from an indurated chancre. MM. Clerc, Bassereau, Diday, and others, arrive at the same conclusion from their own observation, and the fact appears now to be well established that *between persons, exempt from previous infection, an indurated chancre gives rise to a chancre of the same nature.*

But another class of cases yet remains. We have endeavored to show that an indurated chancre never occurs twice in the same subject. What then will be the consequence if a person, already infected with syphilis, be exposed to the virus of an infecting ulcer? When pus from an indurated chancre is inoculated artificially upon the person bearing the chancre, the inoculation is either unsuccessful, and produces no result, or the chancre which is developed has a soft base, and is analogous in its form and aspect to a simple chancre.

It is an observed fact, that in the great majority of cases in which a person, bearing an indurated chancre, is inoculated with his own virus, no chancre is produced. Fifty-five such inoculations, performed by M. Fournier with pus taken from the chancres after they had attained their full development, but before their period of decline, were entirely without result. In a few instances, however, especially when the pus is taken from the chancre at an earlier period, an ulcer is produced, which, as already stated, is entirely analogous to a simple chancre. In those cases also in which the contagion takes place in sexual intercourse, the result is the same; though the person transmitting the disease has an indurated chancre, the person receiving it, if previously infected with syphilis, contracts only what is apparently a simple chancre. If you follow a chancre, produced under such circumstances, through the different phases of its development, you will find no trace of specific induration about it; and if you examine the neighboring lymphatic ganglia, they will exhibit no change analogous to that produced upon them by an infecting ulcer.

The pus, then, of an infecting chancre produces, upon a person previously infected, a chancre with a soft base, and analogous in appearance to a simple chancre.

But though thus resembling each other in their external aspect, are these two chancres identical in their nature; or does the apparently soft chancre of an infected individual still preserve the attributes of an infecting chancre, and especially the power of causing an infecting chancre, if communicated to a person free from previous taint? Ricord is inclined to believe the latter solution of this question to be the correct one; since four instances have come under his observation in which an apparently soft chancre in a syphilitic

subject has given rise to an indurated chancre followed by constitutional symptoms in a person free from previous taint.

The following propositions comprise the conclusions at present attainable with regard to the transmission of the two kinds of chancre:—

I. *A simple chancre in subjects previously free from syphilis, is transmitted as a simple chancre.*

II. *An indurated chancre is transmitted as an indurated chancre in like persons.*

III. *An indurated chancre produces, in persons before infected, a chancre with a soft base, and analogous to a simple chancre.*

IV. *A chancre with a soft base in an infected subject, will give rise to a simple, or to an indurated chancre, according to the nature of the ulcer from which it was derived.*

Is there a double syphilitic virus?—Thus far in our investigation as to the nature of chancres, we have been guided by observation. The mind naturally wishes to proceed one step farther, and ascertain whether there exists a special cause for each of these two varieties of ulcers; in short, to solve the question of the unity or the duality of the syphilitic virus. But, as yet, we should be too hasty in attempting to decide this question. Many points yet remain doubtful, and require farther investigation; the veil is not wholly lifted; perhaps we are not yet prepared to look at the question in all its bearings; we have only a glimpse of the whole subject; we must wait.

And yet it would appear that, however this question may be solved, there can be only one virus which deserves the name of *syphilitic*. Even if it should be demonstrated that the two varieties of chancre belong to two species which are pathologically distinct, it would only prove that by the side of syphilis there exists another affection, manifesting itself like it at the outset by an ulcer, which secretes virulent and contagious pus, but, unlike it, never infecting the economy. We could not conclude that the *syphilitic* virus is double, but that there exists a second *venereal* or *chancrous* virus, independent of syphilis. In other words, we would then admit two poisons, one belonging to syphilis, and producing the infecting chancre, the other distinct from syphilis, and giving rise to the simple chancre.—EDITOR.]

§ 1. *Of the Phimosis and Paraphimosis.*

These diseases arise from a thickening of the cellular membrane of the prepuce, in consequence of an irritation capable of producing considerable and diffused inflammation, which, when it does happen, is generally in consequence of a chancre in this part. This irritation, however, and inflammation, sometimes attacks the prepuce, even when the disease is in the form of what I suspect to be a gonorrhœa of the glans and prepuce, sometimes even in the common gonorrhœa, but most frequently of all from a chancre in the prepuce. When this disease or tumefaction takes place in consequence of a chancre, I suspect

that there is an irritable disposition in the habit; for it is plain there is more than the specific action, the inflammation extending beyond the specific distance.¹

It may be observed, here, that the prepuce is no more than a doubling of the skin of the penis when not erected, for then it becomes too large for the penis, by which provision the glans is covered and preserved when not necessary to be used, whereby its feelings are probably more acute. When the penis becomes erect, it in general fills the whole skin, by which the doubling forming the prepuce in the non-erect state is unfolded, and is employed in covering the body of the penis.

The diseases called phimosis and paraphimosis, being a thickening of the cellular membrane of this part, they will commonly be in proportion to the inflammation and distensibility of the cellular membrane of the part. The inflammation often runs high, and is frequently of the erysipelatous kind; besides, in such parts, where the cellular membrane is so very loose, the tumefaction is considerable, and the end of the prepuce being a depending part, the serum is accumulated in it, which, in many inflammations, is allowed to pass from the inflamed to some more depending part, as in an inflammation of the leg or thigh, where the foot commonly swells or becomes œdematous in consequence of the descent of the serum extravasated above.

A natural contraction of the aperture of the prepuce is very common, and so strong in some that those under such construction of parts have a natural and constant phimosis. Such a state of parts is often attended with chancres, producing very great inconveniences in the time of the cure; and in those cases of considerable diffused inflammation, a diseased phimosis, similar to the other, unavoidably follows; and, whether diseased or natural, it may produce the paraphimosis simply by the prepuce being brought back upon the penis; for this tight part acting as a ligature round the body of the penis behind the glans, retards the circulation beyond the ligature, producing an œdematous inflammation on the inverted part of the prepuce. When the paraphimosis takes place in consequence of a natural tightness only, although attended with chancres, yet it has nothing to do with the constitution, this being only accidental; however, in either case, a paraphimosis is to be considered as in some degree a local violence.

This natural phimosis is so considerable in some children as not to allow the urine to pass with ease; but, in general, becomes larger and larger, as boys grow up, by frequent endeavors to bring it over the glans, by which the bad consequences that would otherwise ensue in it when affected with disease are often prevented.

¹ Any ulcer on the internal prepuce may produce phimosis, because it may be attended by so much thickening as to destroy the natural flexibility of the prepuce. A chancre is more likely to produce it than any other sore, because it is necessarily accompanied by induration, and that of a kind which is much more obstinate than the thickening of a common inflammation.—G. G. B.

[I cannot allow Mr. Babington's erroneous assertion, that "every chancre is necessarily accompanied by induration," to pass without contradiction, now that we know that the majority of chancres are not indurated.—RICORD.]

This part of the prepuce, although in most men it is loose enough to produce no inconvenience in a natural state, yet sometimes contracts without any visible cause whatever, and becomes so narrow as to hinder the water from getting out, even after it has got free from the urethra, so that the whole cavity of the prepuce shall be filled with the urine, and give great pain. The cases that I have seen of this kind have been principally in old men.

When the prepuce is in its natural position, it then covers entirely the glans, and is commonly a little loose before it; when it begins to swell and thicken, more and more of the skin of the penis is drawn forwards over the glans, and the glans at the same time is pushed backwards by the swelling against its end. I have seen the prepuce projecting, from such a cause, more than three inches beyond the glans, and its aperture much diminished.

The prepuce often becomes in some degree inverted by the inner skin yielding more than the outer, having a kind of neck where the outer skin naturally terminates. From the tightness and distension of the parts in a state of tumefaction it becomes impossible to bring it back over the penis, so as to invert it and expose the sores on the inside.

Such a state of the prepuce is very often productive of bad consequences, especially when the chancres are behind the glans; for the glans being between the orifice of the prepuce and the sores, it there fills up the whole cavity of the prepuce, between the chancres and opening, and often so tightly, that the matter from the sores behind cannot get a passage forwards between the glans and prepuce, by which means there is an accumulation of matter behind the corona glandis, forming an abscess which produces ulceration upon the inside of the prepuce. This abscess opens externally, and the glans often protruding through the opening, throws the whole prepuce to the opposite side, the penis appearing to have two terminations.

On the other hand, if the prepuce is loose, wide, and is either accustomed to be kept back in its sound state or is pulled back to dress the chancres, and is allowed to remain in this situation till the above tumefaction takes place, then it is called a paraphimosis; or if the prepuce is pulled forcibly back after it is swelled, it is then brought from the state of a phimosis, as before described, to that of a paraphimosis.

The last-described situation of the prepuce is often much more troublesome, and often attended with worse symptoms, than the former, especially if it should have been changed from a phimosis to a paraphimosis. The reason of which is, that the aperture of the prepuce is naturally less elastic than either the internal inverted part or the external skin; therefore, when the prepuce is pulled back upon the body of the penis, that part grasps it tighter than any other part of the skin of the penis, and more so in proportion to the inflammation; the consequence of which is, the swelling of the prepuce is divided into two, one swelling close to the glans, the other behind the stricture or neck. This stricture is often so great as to interrupt the free circulation of the blood beyond it, which also assists in increasing the

swelling, adds to the stricture, and often produces a mortification of the prepuce itself, by which means the whole diseased part, together with the stricture, is sometimes removed, forming what may be called a natural cure.¹

In many cases, the inflammation not only affects the skin of the penis, in which is included the prepuce, but it attacks the body of the penis itself, often producing adhesions and even mortification in the cells of the corpora cavernosa, either of which will destroy the distensibility of those parts ever after, giving the penis a curve to one side in its erections. This sometimes takes place through the whole cellular substance of the penis, producing a short and almost inflexible stump.

The adhesions of those cells do not proceed from venereal inflammation only; they are often the consequences of other diseases, and sometimes they take place without any visible cause whatever.

A gentleman, sixty years of age, who has been lame with the gout these twenty years past, has for these eighteen months had the penis contracted on the left and upper side, so as to bend that way very considerably in erections, which erections are more frequent than common.

Quere: Is the gout the cause of this, by producing adhesions of the cells of one corpus cavernosum, so as not to yield or to allow of the influx of blood on that side? And is the irritation of the gout the cause of the frequency of the erections?

[RICORD.—Congenital phimosis, in any of its various degrees, may undergo no modification from the presence of gonorrhœa, balanitis, or even chancres; for the prepuce often escapes the inflammation and ulceration, in spite of its intimate connection with the diseased parts. However, in many cases, whether there was previous congenital phimosis or not, accidental phimosis supervenes under circumstances and with peculiarities which it is important to understand, and on which Hunter has not perhaps sufficiently dwelt.

If we examine the morbid affections which may give rise to phimosis, we find that it is seldom a consequence of urethral gonorrhœa. Yet it does occur in some cases of urethritis, more especially when the latter is complicated with inflammation of some of the lymphatic vessels of the penis, or with phlegmon and abscess in the neighborhood of the urethra. External gonorrhœa is the most common cause of accidental phimosis, especially when the inflammation involves the internal layer of the prepuce. Chancres, when free from complication with balanitis and posthitis, produce it much more rarely. But besides these causes, which may be considered the most important, there are still others which it is desirable to understand. Thus, in constitutional syphilis, various eruptions may take place on the glans and prepuce, and phimosis supervene, either in consequence of the inflam-

¹ A young man came into St. George's Hospital with a paraphimosis in consequence of chancres on the inside of the prepuce. All the parts before the stricture, formed by the prepuce, mortified and dropped off. I ordered nothing but common dressings, and it healed very readily, and he left the hospital cured of the local complaint. Whether or not absorption had taken place previous to the mortification I do not know, as I never heard more of him.

mation which sometimes precedes or attends them, or from hypertrophy of the tissues, as occurs in tubercular eruptions, or again, it may be owing to the development of vegetations. And this is not all; simple irritation, excessive use and fatigue of the parts, and herpes and eczema, which are so frequent in this region, may also occasion it. I once saw a very acute phimosis which followed rupture of a vein and infiltration of blood, as also happens in infiltration of urine.

After these considerations, if we study the intimate nature of phimosis, we find that it depends either on development of the parts inclosed within the prepuce, while this envelop remains sound, or on different morbid states affecting the latter. To the first class belong vegetations, tubercles, and hypertrophy of the glans, which make this organ relatively too large to pass through the opening in the prepuce; whilst to the second class belong those changes which may take place in the prepuce itself. The latter may consist merely of simple œdema, which sometimes complicates erysipelas, as is observed after the application of leeches to the skin of the penis; at other times, there is true phlegmonous inflammation occasioned by a bastard gonorrhœa, or following inflammatory chancres. In such cases, abscesses form in the substance of the prepuce, and may open externally or internally, sparing one or the other of the two preputial folds, or the whole thickness of this envelop is destroyed by an eschar or ulcer proceeding from within outwards. Then, as Hunter so well observes, in proportion as the orifice of the prepuce contracts, the pus accumulates between it and the glans, forming an abscess which is discharged by the accidental opening, through which the glans itself often protrudes. It is remarkable that it is always the superior portion of the prepuce which is destroyed, the inferior portion generally resisting, and the preputial orifice being also spared in a large number of cases. But whatever may be the cause of these acute inflammatory phimoses of gangrenous tendency, if we wait for the efforts of nature, it often happens that the glans and corpora cavernosa are destroyed by the retention of the virulent or ichorous pus, although at first they took no part in the affection. We have said that chancres may be the cause of phimosis, and in such cases the prepuce may present variations in respect to the extent and situation of the ulcers, which it is interesting to notice. When the ulcers are situated at the orifice of the prepuce, there is commonly only a part of it which is incapable of sufficient dilatation for the passage of the glans, and in this case the stricture takes place without there necessarily being any other complications. Another notable state of things exists, when the prepuce is the seat of induration pertaining more particularly to a callous chancre; and it is not uncommon in this case to find the prepuce of its ordinary dimensions, but having lost its natural suppleness and power of being everted, in consequence of the induration which renders it almost cartilaginous. Finally, as I said above, phimosis is sometimes the consequence of the development of inodular tissue in the substance of the prepuce, or of cicatrices most frequently observed on its free border, and caused by the various losses of substance to which it is liable. Again, in some

cases, there are congenital or accidental adhesions between the glans and prepuce.

From the preceding considerations, a distinction should always be made between permanent and temporary phimosis. To the first belong congenital phimosis, and phimosis consequent on vicious cicatrices; to the second, all those morbid alterations which are susceptible of cure, and which leave the prepuce in its normal state. This distinction is not without value in practice; since, though an operation is almost always indicated in the first case, we may, and frequently should, abstain from one in the second.

With regard to paraphimosis, allow me to recall a few practical points, which should be remembered in the treatment. Paraphimosis most frequently follows congenital or accidental phimosis; but it may also be primary; that is to say, occur in individuals whose glans is habitually uncovered. Paraphimosis succeeding phimosis soon attains its highest degree of intensity; whilst, on the contrary, its progress is more or less slow and gradual when it is primary. Sometimes it is simply œdematous, or œdematous and complicated with various kinds of induration; at other times it is decidedly inflammatory.

Paraphimosis may occur in the course of urethritis or balanitis, or in connection with various ulcers. When it is very intense, the strangulated parts become engorged, as Hunter remarks; and thus I have seen gangrene of the glans produced. But, generally, it is the preputial ring which ulcerates and is destroyed; but the ulceration, which tends at first to separate the mucous from the cutaneous layer of the prepuce, does not always promptly relieve the stricture; and hence adhesions, vices of conformation, and hard persistent œdema are often produced.

In a practical point of view, reducible paraphimosis must also be distinguished from irreducible, and regard be paid to the attending circumstances. But I shall have occasion to return to this subject in speaking of the treatment.—RICORD.]

CHAPTER II.

OF CHANCRES IN WOMEN.

WOMEN are subject to chancres; but from the simplicity of the parts, the complaint is often less complicated than in men. For in this sex we have only the disease and constitutional affection, and no inconvenience arising from the formation of the parts.

When the matter is introduced into the vagina or urethra, it there irritates a secreting surface, as I described when treating of the disease in general and of women in particular; but when it is lodged in the inside of the skin of the labia or nymphæ, those parts are often only affected with gonorrhœa; but, like the glans penis in men, they are

also capable of ulceration. Ulcerations are generally more numerous in women, because the surface upon which they can form is much larger; we find them on the edge of the labia, sometimes on the outside, and even on the perineum.

Ulcers that are formed on the inside of the labia or nymphæ are never allowed to dry or scab; but on the outside they are subject to have the matter dry upon them, which forms a scab similar to those on the body of the penis or scrotum.

The venereal matter from such sores is very apt to run down the perineum to the anus, as in gonorrhœa, and excoriate the parts, especially about the anus, where the skin is thin, and often produces chancres in those parts.

Chancres have been observed in the vagina; which I suspect not to have been original ones, but to have arisen from the spreading of the ulcers on the inside of the labia.¹

This form of the disease, like the gonorrhœa, both in women and in men, is entirely local, the constitution having no connection with it but sympathetically, and I believe much more seldom in this than in the former.

[RECORD.—I will not add to what I have said in speaking of chancres in general, nor repeat my views on chancres of the vagina and uterus, which coincide with Mr. Babington's remarks. I will only observe that chancres in women are far from always being as simple an affection as Hunter supposed; and that, on the contrary, it is not uncommon to see them take on all the complications which may exist in men, whether they be situated on the vulva, urethra, vagina, or uterus.

However, this chapter deserves still farther to fix our attention; for a misunderstanding of some passages of it, has caused ideas to be attributed to Hunter which this great master never had. Indeed, Hunter acknowledges here, and in all the rest of his work, that both gonorrhœa and chancre in the two sexes are at first entirely local affections, the consecutive effects of which are of two distinct kinds, according as they are the result of absorption of the virus, producing constitutional syphilis, or of simple sympathetic reaction, determining fever, disturbance of the system, &c. Some syphilographers, supporters of the so-called physiological school, have, therefore, been wrong in thinking they found in the writings of Hunter an avowal of the doctrine of sympathies, such as they teach it; for Hunter was too good an observer to fall into such an error.

But admitting, as I do, Hunter's true and practical distinctions, and recognizing, as he did, that gonorrhœa excites sympathetic reactions more frequently than a chancre does, I still grant to chancre alone the prerogative of determining constitutional infection by absorption.]

¹ Original chancres do occasionally occur within the vagina, being situated on the membrane lining the vagina, or on the os uteri itself. These chancres can only be detected by the use of a speculum. However, sores on these internal parts are extremely rare, notwithstanding the degree in which they are exposed to the contact of the venereal virus during coition.—G. G. B.

CHAPTER III.

GENERAL OBSERVATIONS ON THE TREATMENT OF CHANCRES.

THE inflammation from the venereal poison, when it produces ulceration, generally, if not always, continues till cured by art, which I observed was not the case with the gonorrhœa. It will, perhaps, not be an easy task to account for the material difference in the two kinds of disease; but I am inclined to think that, as the inflammation in the chancre spreads, it is always attacking new ground, which is a succession of irritations, and is the cause that it does not cure itself.

Chancres, as well as the gonorrhœa, are perhaps seldom or never wholly venereal, but are varied by certain peculiarities of the constitution at the time. The treatment, therefore, of them, both local and constitutional, will admit of great variety; and it is upon the knowledge of this variety that the skill of the surgeon principally depends. On this account, the concomitant symptoms are what require particular attention. Mercury is the cure of the venereal symptoms abstractedly considered; but there is no specific for the others, the treatment of which must vary according to the constitution. From hence, we must see that no one kind of medicine joined with mercury will be likely to succeed in all cases, although the different pretended secrets are of this kind, some cases not requiring anything excepting mercury, others requiring a something besides, according to their nature, which, in many cases, it will not be an easy matter to find out from the appearances of the chancre itself, but which must be discovered by repeated trials.

Probably, from the before mentioned circumstances it is that a chancre is, in common, longer in healing than most of the local effects from the constitutional disease, or lues venerea, at least longer than those in the first order of parts; and this is found to be the case, notwithstanding that the cure of a chancre may be attempted both constitutionally and locally, while the lues venerea can, in common, only be cured constitutionally. It is commonly some time before a chancre appears to be affected by the medicine. The circulation shall be loaded with mercury for three, four, or more weeks, before a chancre shall begin to separate its discharge from its surface, so as to look red and show the living surface; but when once it does change, its progress towards healing is more rapid. A lues venerea shall, in many cases, be perfectly cured before chancres have made the least change.

Upon the same principle, some attention should be paid to internal medicines; and it should be considered whether weakening, strengthening, or quieting medicines should be given; for sometimes one kind, sometimes another, will be proper.

Chancres admit of two modes of treatment; the object of one is to destroy or remove them by means of escharotics or by extirpation; that of the other is to overcome the venereal irritation by means of the specific remedy for that poison.

I have endeavored to show that chancres are local complaints; this opinion is farther confirmed by their being destroyed or cured by merely a local treatment. But in chancre, as well as in a gonorrhœa, it has been disputed whether mercury should ever be applied locally to them or not; some have objected to it, while others have practised it, and probably the dispute is not yet generally settled.

Upon the general idea which I have endeavored to give of the venereal disease, it can be no difficult task to determine this question.

It is to be observed that, in the cure of the chancres, we have two points in view: the cure of the chancre itself, and the prevention of a contamination of the habit.

The first, or the cure of the chancre, is to be effected by mercury applied either in external dressings, or internally through the circulation, or in both ways. The second object, or preservation of the constitution from contamination, is to be obtained, first, by shortening the duration of the chancre, which shortens the time of absorption, and also by internal medicine, which must be in proportion to the time that the absorption may have been going on.

If the power of a chancre to contaminate the constitution, or, which is the same thing, if the quantity absorbed is as the size of the chancre and the time of absorption, which most probably it is, then whatever shortens the time must diminish that power or quantity absorbed; and if the quantity of mercury necessary to preserve the constitution is as the quantity of poison absorbed, then whatever lessens the quantity absorbed must proportionally preserve the constitution. For instance, if the power of a chancre to contaminate the constitution in four weeks is equal to four, and the quantity of mercury necessary to be given internally, both for the cure of the chancre and the preservation of the constitution, is also equal to four, then whatever shortens the duration of the chancre must lessen in the same proportion the quantity of the mercury; therefore, if local applications, along with the internal use of mercury will cure the chancre in three weeks, then only three-fourths of the mercury is necessarily wanted internally. Local applications, therefore, so far as they tend to shorten the duration of a chancre, shorten the duration of absorption, which also shortens the necessity of the continuance of an internal course of mercury, all in the same proportion. For example, if four ounces of mercurial ointment will cure a chancre and preserve the constitution in four weeks, three ounces will be sufficient to preserve the constitution if the cure of the chancre can be by any other means forwarded so as to be effected in three weeks. This is not speculation, but the result of experience, and the destruction of chancres confirms it.

[G. G. B.—The author's experience on this point seems to be at variance with that of others. It does not appear that in practice it is safe to make the period of the healing of the sore a measure of the length of the mercurial course. General experience would seem to

show that a mercurial course for primary symptoms, even though it be commenced before the chancre has existed a week, cannot be continued for a less period than a month, without exposing the patient to imminent danger of a subsequent relapse.—G. G. B.]

[RICORD.—All of Hunter's general observations on the treatment of chancres are far from having been confirmed by experience.

Doubtless, most chancres are cured only by art; but it can be shown that many heal of themselves, and heal the faster the less they are irritated by improper treatment. For instance, an uncomplicated chancre which would get well in three or four weeks, if kept clean and dressed simply, is often kept up and even extended, by the application of unsuitable mercurial dressings.

If we compare gonorrhœa with chancre in respect to the facility of their cure, daily observation will compel us to admit that Hunter's views on this subject were rather theoretical than practical; for it may be shown that, on the whole, a chancre is cured sooner than a gonorrhœa, at least in the great majority of cases, and without the aid of mercurials. If we abandon the two diseases to themselves, or to the resources of nature alone, we find many more interminable gleans than chronic venereal ulcers. If Hunter had not been influenced by adherence to a system which continually hampered him in his explanations, he would have observed cases in which the analogy between a chancre and certain forms of gonorrhoid discharges was perfect, viz., those cases in which the discharge depends upon a chancre situated in the urethra, in the deep portion of the vagina or in the cavities of the uterus. Hunter makes a very true remark, and one which explains many facts, viz., that chancres do not always exist alone; that is to say, the syphilitic ulcer is frequently complicated with other pathological conditions, which alter its character or mask it, and which, at the same time that they cause it to deviate from its regular course, present indications so complex or so opposed to each other, that no single method of treatment can be rationally employed in all cases. We must coincide with Hunter, especially when he says that gonorrhœa is perhaps *seldom or never wholly venereal*; as I have shown, it is venereal only when it coexists with a chancre.

It is not true, as Hunter asserts, that specific inflammation prevents the spontaneous cure of a chancre, by spreading and always attacking new ground; for it is very certain, all other things being equal, that a syphilitic ulcer is sooner circumscribed and limited than gonorrhœal inflammation, which constantly tends to involve more and more of the mucous surface of which it at first affected only a single point.

Laying aside the complications of a chancre, and regarding the primary ulcer alone, we must beware of believing mercury its only specific. This powerful therapeutic agent has no true specific property, except in case the chancre be indurated.

Hunter is right in saying that *induration* is a frequent property of a chancre, but he does not dwell sufficiently on the importance of this symptom with regard to the prognosis of the primary ulcer, the possibility of the appearance of constitutional symptoms, and especially the therapeutic indications, which it always furnishes.

An extended and careful experience, added to exact experiment, authorizes me to lay down the following propositions, which any one may verify:—

1. A chancre is at first essentially a local affection, and it continues to be so unless induration and symptomatic engorgement of the neighboring ganglia supervene. The duration of the disease, and the extent and number of the affected surfaces add nothing to the chances of constitutional infection.

2. If a chancre become indurated (and this rarely happens before the fifth or sixth day), the disease ceases to be simply a local affection; *induration being a certain proof that the system is contaminated.*

I do not know if there be any exceptions to this law.

3. There are two things to be considered in the cure of a chancre; first, the cicatrization or disappearance of the ulcer; secondly, the state of the tissues beneath it. A cure is really effected, only when the induration disappears. An indurated chancre which cicatrizes very rapidly, will be followed by constitutional symptoms, as well as one which continues a longer time; whilst a non-indurated chancre, which is as long or even longer in getting well than the former, will cause nothing of the kind; induration being requisite for the production of the constitutional phenomena of syphilis, no matter how long the primary ulcer lasts.

4. We are to regard the use of mercury as the most efficacious special treatment for indurated chancres that we possess; induration, being an indication that constitutional syphilis already exists, over which, as Hunter judiciously remarks, mercury has frequently more power than over the primary ulcer, especially when the latter is not attended with induration.

5. The early administration of mercury, in cases of indurated chancre, may anticipate the development of constitutional symptoms.

6. In the case of an uncomplicated indurated chancre, mercurial treatment may be local or general.

7. The duration of mercurial treatment is not to be measured by the cicatrization of the chancre, *but by the entire disappearance of the induration*; and even this is not always sufficient.

Let any one reflect on the preceding propositions, and he will find that in them the apparently contradictory opinions of authors harmonize.—RICORD.]

§ 1. *Of the Destruction of a Chancre.*

The simplest method of treating a chancre is by destroying or extirpating it, whereby it is reduced to the state of a common sore or wound, and heals up as such. This only can be done on the first appearance of the chancre, when the surrounding parts are not as yet contaminated, because it is absolutely necessary that the whole diseased part should be removed, which is done with difficulty when it has spread considerably. It may be done either by incision or by caustic. If the chancre appears upon the glans, touching it with the

lunar caustic is preferable to incision, because the hemorrhage by such a mode would be considerable from the cells of the glans.

The common sensation of the glans is not very acute, therefore the caustic will give but little pain. The caustic to be used should be pointed at the end like a pencil, that it may only touch those parts that are really diseased. This treatment should be continued till the surface of the sore looks red and healthy, after having thrown off the last sloughs; after it has arrived at this state, it will be found to heal like any other sore produced by a caustic.

If the sore is upon the prepuce, or upon the common skin of the penis, and in its incipient state, the same practice may be followed with success; but if it has spread considerably, it is then out of the power of the caustic when only applied in this slow manner to go so deep as to keep pace with the increasing sore, but it is very probable that the lapis septicus may answer very well in such cases. When this cannot be conveniently used, incision will answer the purpose effectually.

I have taken out a chancre by dissection, and the sore has healed up with common dressings. However, as our knowledge of the extent of the disease is not always certain, and as this uncertainty increases as the size of the chancre, it becomes necessary in some degree to assist the cure by proper dressings, and therefore it may be prudent to dress the sore with mercurial ointment. From such treatment there is but little danger of the constitution being infected, especially if the chancre has been destroyed almost immediately upon its appearance, as we may then reasonably suppose there has not been time for absorption. But, as it must be in most cases uncertain whether there has been absorption or not, this practice is not always to be trusted to, and from that circumstance perhaps never should; and, therefore, even in those cases where the chancre has been removed almost immediately, it would be prudent to give some medicine internally, the quantity of which should be proportioned to the time and progress of the sore; but if it has spread to a considerable size before extirpation, then mercury is absolutely necessary, and perhaps not a great deal is gained by the extirpation.

[G. G. B.—The treatment of chancres by caustic or extirpation is more beautiful in theory than commendable in practice. It is impossible to know with certainty to what distance the virus has extended, and the whole of the contaminated parts may not therefore be destroyed by the caustic. This defect is not always evident at the time. The sore may cicatrize under the caustic, yet the virus may not be extirpated, and the general system may be subsequently affected. Again, caustic seems to increase the disposition to absorption, so that if the object is not attained by the first application it will not in general be achieved by its repetition. Hence it happens, in very many instances, that the use of caustic is followed immediately by a bubo, and, at a more remote period, by secondary symptoms; and the patient, who might have been cured in the first instance by a moderate course of mercury, is subsequently exposed to the necessity of passing through a protracted course, which is not only attended with much

trouble and annoyance, but which cannot be employed without considerable risk to the general health. The treatment by caustic should therefore be reserved for those cases where, from peculiar circumstances, an immediate course of treatment must be avoided at all risks.

When caustic is supposed to be successful, the sores are, for the most part, not chancres, but simple pustules or herpetic vesicles.—G. G. B.]

[RICORD.—The destruction of chancres as soon as they appear, or, in other words, their abortive treatment, is one of the most interesting points connected with syphilis, and also one which has given rise to the most erroneous theories and most dangerous modes of practice.

If a chancre be at first a local affection, as Hunter asserts, and as observation and experiment prove it to be, we must be consistent, and treat it as everybody treats the bite of a serpent or a mad dog; that is to say, destroy the local disease as soon as possible, so as to get the start of absorption and its consecutive phenomena. Reflect well on this subject; on it depends the future of syphilis; on the one hand is the possibility of destroying this terrible scourge, and on the other its eternal propagation. Preach the truth to men of the world; tell them that secondary symptoms have rarely, if ever, followed chancres which were destroyed before the fifth or sixth day after the infecting coition; and if you can drive them to examine themselves carefully, and to destroy early and thoroughly every suspicious point, you will save them from constitutional infection.

It has been said that chancres which are cauterized are oftener followed by secondary syphilis than others; but not a single one of those persons who have made this assertion has taken the trouble to point out the exact condition of the chancres at the time of cauterization; as if chancres had only one form, and were always the same in all individuals, in all stages, and in spite of all possible complications.

Well, then, taking into account this consideration, without which it is impossible to reason, we may lay down the following propositions:—

1. When a chancre is destroyed by cauterization before the sixth day after infection, the cure is very rapid, and the patient is generally protected from contamination of the system.

2. When a chancre has already lasted a certain time, and is attended with induration, cauterization does not prevent or favor constitutional infection. In this case it is no longer an abortive treatment, and can only serve to modify the ulcer and to hasten its cicatrization, which is always desirable, since secondary symptoms do not occur in proportion to the rapidity of the cicatrization.

3. It is a mistake to say that, by cauterizing a chancre and healing it too soon, you lose a guide for the treatment. The only true guide furnished by the primary ulcer is its induration; and when induration exists, cauterization, as it is commonly practised, does not destroy it.

4. Even those who censure cauterization, tell you that secondary symptoms are proportioned to the extent, number, and duration of the primary ulcers; and yet they think themselves logical when they reject a means, which, according to their own doctrine, diminishes the extent and limits the number of the diseased surfaces, and also abridges

the duration of the local disease, which is a permanent focus for constitutional infection.

5. It has been said that cauterization favors the development of buboes. This is a mistake, which has been accredited on the authority of Bell's slender statistics. Daily statistics, collected on an immense scale at the Hôpital des Vénériens at Paris, give a formal contradiction to this assertion. Like any other cause of irritation, cauterization may excite sympathetic engorgement of the neighboring lymphatic ganglia; but virulent buboes do not spring up under its influence; these obey laws which we shall consider hereafter.

6. It is very curious to see cauterization applied every day to all kinds of poisoned wounds, to malignant pustule, and to the bite of a dog; to see it employed, also, against smallpox, in experiments on vaccination, &c., without its ever entering anybody's head to ascribe to its use the constitutional symptoms which generally follow; whilst, in case of syphilis, an exception is made which nobody can explain, which logical reasoning repudiates, and which experiment proves not to exist.

7. The three methods proposed by Hunter, for destroying the local disease, may be thus summed up:—

a. A sharpened crayon of nitrate of silver is the mode which is most generally applicable, and which is sufficient when the disease has just commenced, whatever may be its situation.

b. Caustic potassa should be employed only when we wish to penetrate to some depth into the deeply affected tissues; but in that case I prefer Vienna paste, which is more easily managed, and especially more readily limited in its action. I now employ monohydrated nitric acid.

Formula for Vienna paste:—

R.—Calcis ʒv;
Potassæ ʒvj.—M.

c. With regard to excision, when performed too near the boundary of a chancre, the wound soon resumes the character of a virulent ulcer. When an indurated chancre, or an induration remaining after a chancre which has cicatrized is completely excised, the wound may still become a specific ulcer, and a new induration follow; but in all cases, even when no ulcer ensues and the wound heals like a simple wound, the excision of the induration does not prevent other phenomena of constitutional infection following.

Old and fresh wounds in the neighborhood of chancres, and the excision of different varieties of chancres, at various distances and in their various stages, form the subject of a work which I shall soon publish.

A surgeon, who a short time ago thought that he had invented a suture to be used in circumcision, by which he claimed that he *always* obtained union by first intention in this operation, whatever the previous state of the parts might have been, maintains at the present day that, at whatever distance you excise a chancre, the operation is *always* followed by a chancreous ulcer. On which occasion was this surgeon right?—RICORD.]

[EDITOR.—In his recent work on chancre, M. Ricord states that he is now using, in the abortive treatment of chancres, a paste composed of sulphuric acid and vegetable charcoal, combined in sufficient quantities to form a semi-solid. This caustic applied to the surface of a chancre forms a dark-colored crust, which adheres to the tissues, and does not, as a general rule, become detached till the second week, by which time the surface beneath is nearly or quite healed.]

The application of this caustic excites severe pain, much less, however, than that produced by nitric acid or the actual cautery, and less persistent than the pain produced by Vienna paste. Its action extends to a considerable depth, and, like the chancre itself, appears to modify the tissues in the neighborhood; hence it is the best agent we can employ for the purpose of destroying a specific ulcer.]

§ 2. *Of the Cure of Chancres.—Local Application.*

The cure of a chancre is a different thing from its destruction, and consists in destroying its venereal disposition, which being effected, the parts heal of course as far as they are venereal.

Chancres may be cured in two different ways, either by external applications, or internal through the circulation. The same medicine is necessary for both these purposes, that is, mercury.

I have shown that a gonorrhœa and a chancre have so far the same disposition as to form the same kind of matter, yet I have also observed that mercury has no more power in curing the gonorrhœa than any other medicine, and therefore it might be supposed that mercury would have no effect in the present complaint; but we find that in a chancre it is a specific, and will cure every one that is truly venereal; but as other dispositions take place, so other assistance is often necessary, as will be taken notice of in the history of the cure. The action of this medicine must be the same in whatever way it is given, for its action must be upon the vessels of the part, in one way acting only externally, in the other internally.¹

For external local applications mercurial ointments are the common dressings; but if the mercury were joined with watery substances instead of oily, by mixing with the matter, the application would be continued longer to the sore, and would prove more effectual. This is an advantage that poultices have over common dressings. I have often used mercury rubbed down with some conserve in the room of an ointment, and it has answered extremely well. Calomel used in the same way, and also the other preparations of mercury mixed with

¹ This is well illustrated by the application of some medicines locally to parts whose actions are immediate and visible; and by throwing the same medicine into the constitution the same immediate and visible effect is produced; for instance, if ten grains of ipecacuanha is thrown into the stomach of a dog it will in a short time make him vomit, from its local applications to that viscus; and if a solution of five grains is thrown into a vein it will produce vomiting before we can conceive it to have got to the vessels of the stomach. The same effects are produced from an infusion of jalap thrown into the veins that are commonly produced when taken into the stomach and bowels.

mucilage or with honey, answer the same purpose. Such dressings will effect a cure in cases that are truly venereal; but perhaps we seldom have a constitution quite free from some morbid tendency.

Some will have an indolent disposition, to counteract which it will be right to join with the mercury some warm balsam in a small proportion, or as much red precipitate as will only stimulate, without acting as an escharotic; and sometimes both may be necessary.

Calomel mixed with some salve, or any other substance which will suspend it, is more active than common mercurial ointment, and in such cases as require stimulating applications it will answer better.

Many other applications are recommended, such as solutions of blue vitriol, verdigris, calomel, with the spiritus nitri dulcis, and many others.

But as all of these are only of service in remedying any peculiar disposition of the parts, having no specific power on the venereal poison, and as such dispositions are innumerable, it becomes almost impossible to say what will be effectual in every disposition; some will answer in one state of the sores, some in another. It may be found oftentimes that the parts affected are extremely irritable; in such cases it will be necessary to mix the mercury with opium, or perhaps preparations of lead, as white or red lead, to diminish the action of the parts.

The oftener the dressings are shifted the better, as the matter from the sore separates the application from the diseased parts, by which means the effects are lost or diminished. Three times every day in many cases is not oftener than necessary, especially if the dressings are of the unctuous kind; for they do not mix, like watery dressings, with the matter, so as to impart some of their virtues to it, which would, in a proportional degree, affect the sore.

Chancres, after having their venereal taint corrected, often become stationary, and having acquired new dispositions, increase the quantity of disease in the part, as will be taken notice of hereafter. When they become stationary only, they may often be cured by touching them slightly with the lunar caustic. They seem to require that the surface which has been contaminated, or the new flesh which grows upon that surface, should be either destroyed or altered before it can cicatrize; and it is often surprising how quickly they will heal after being touched, and probably once or twice may be sufficient.

[RICORD.—1. Although, as a general rule, we should not dress an ulcer or a wound so frequently as to interfere with the process of cicatrization, yet we must take care not to follow the same precept with regard to chancres in the progressive stage; here, we must recollect, that the secreted pus is a permanent cause of disease, and that it is important not to let it remain on the tissues. The dressings should be repeated, therefore, three or four times a day, according to the abundance of the suppuration.

2. It is a rule, with the exception of certain cases which will be mentioned hereafter, to keep the affected parts exposed; and we must be very careful not to let cutaneous chancres be covered with scabs, under which the pus may stagnate and burrow.

3. So long as a chancre remains in a state of ulceration, it may be

cauterized with nitrate of silver or nitric acid, whenever its floor or edges—after the fall of eschars produced by previous cauterizations—present the characters belonging to this period; but as soon as the reparative stage commences, we should spare those parts which are healing, but redouble our care in cauterizing those which are still in the course of specific ulceration.

4. Fatty substances, in general, are commonly injurious in the treatment of chancres; and we may assert that, except in certain cases, mercurial ointments are more injurious than any others. Nothing is more common than to see non-indurated chancres multiply, extend, or become inflamed, when they are dressed with mercurial ointments.

5. As we have already said, it is well not to leave the pus of a chancre in contact with the secreting surface; and it is also very desirable to diminish its secretion. Dry charpie, which forms a kind of sponge, and carded cotton fulfil one of these indications. But the treatment which yields the most rapid cures, is with the aromatic wine of the French codex. The following is the manner in which I employ it:—

I direct patients to wash the ulcer carefully with this liquid, without, however, fatiguing the parts, or making them bleed; and then to apply a little fine charpie, soaked in it just enough to be moist; for, when it is too wet, it macerates the parts and impairs the effect. At each dressing, the charpie should be moistened with the same fluid before being detached, so as not to tear the ulcer, to which it may have adhered in drying.

All persons who will follow my clinique at the Hôpital du Midi, can convince themselves of the good effects of this treatment; after which, unless it be badly applied, *successive chancres never occur, as takes place so frequently after other dressings*. The aromatic wine diminishes the purulent secretion, tends to modify and cicatrize the surface of the virulent ulcer; and, by acting on the neighboring parts as a powerful astringent, renders them incapable of inoculation.

But I have met with some patients in whom the secretion continued to be very abundant even under this treatment; and, in that case, dressings with the vinous decoction of oak bark were perfectly successful. I, however, now prefer the following solution:¹—

R.—Ferri et potassæ tart. ʒv;
Aquæ ʒvj.—M.

When there is pain, and the aromatic wine increases it, we may, by adding six or seven grains of extract of opium to every ounce, again make it a very excellent application. It is well to remark, however, that among those patients who continue to suffer pain, some will be found in whom it is made to disappear by increasing the quantity of opium; while, in others, the latter must be diminished.

Yet in some cases it is necessary to suspend the medicated wine or

¹ In his *Leçons sur le Chancre*, M. Ricord speaks in the highest terms of this solution as a dressing for chancres, especially when the sore shows a tendency to extend. Indeed, he regards it as almost a specific against phagedenic ulceration, when given internally as well as applied locally. He uses the same formula for internal administration, ordering the patient to take a tablespoonful three times a day.—Ed.

the ferruginous solution for a while, or even to give them up entirely. Thus, in some patients, the suppuration ceases, but the ulcer remains stationary, and, in that case, we should substitute, for several days, a dressing of some emollient decoction or opiated cerate,¹ and afterwards resume the wine or the solution. Also, in some other patients, when the ulcers are accompanied by induration, these dressings increase the latter, and prevent cicatrization. But with the exception of these cases, those means which I have mentioned constitute the general mode of dressing which I prefer.

6. When the reparative stage commences, so long as it proceeds regularly, we must continue the dressings, resuming cauterization only when it is necessary to repress exuberant granulations. Finally, it often happens that nothing is wanting but the epidermis to complete the cure; the surface of the ulcer, raised to a level with the surrounding parts, is red, and covered with scarcely any secretion, and yet the ulcer does not heal. Then, the superficial application of nitrate of silver, so as to whiten the surface without cauterizing it deeply, will be sufficient to complete the cure.

7. In regular uncomplicated chancres, local treatment is sufficient, *provided that no induration be left after the treatment in the part which was affected.* During this treatment, we should content ourselves with keeping the patient as quiet as possible, and subjecting him to regimen proportioned to his constitution. Indeed, in this respect, we want no invariable rule. Debilitating regimen, strict diet, diluent drinks, and general and local antiphlogistics, which are indicated in stout individuals inclined to inflammation, would be most injurious in feeble lymphatic subjects, already suffering from imperfect nourishment. For such we should prescribe with caution a moderately tonic regimen, and, in general, all such means as will correct any abnormal deviation of the system and remedy any concomitant unhealthy state; for we must recollect that a poor constitution or coexisting diseases are the cause of the complications which may accompany chancres, and of the vicious course which they may follow.

When a regular chancre has cicatrized, and the tissues beneath it have completely recovered their normal state, the patient, after a few days, may indulge without fear in sexual intercourse. But the case is different when an induration is left beneath the cicatrix, which may again open, giving rise to ulcerations, and we must recommend absolute continence until the cure is perfect.

But now let us examine, in respect to their treatment, the principal varieties of chancre which we have admitted.

1. *Concealed Chancres.*—When a chancre is situated in the urethra, and is accompanied with symptoms of acute gonorrhœa, antiphlogistic treatment should be resorted to at first; as leeches to the perineum and over the symphysis pubis, emollient or opiated local baths, general bathing, and copious drinks. The patient should endeavor to avoid erections, which stretch the diseased parts, tear them, and increase the

¹ The opiated cerate of the *Formulaire des Hôpitaux de Paris* contains a drachm of laudanum to an ounce of cerate.—Ed.

ulceration. For this purpose, I prescribe two of the following pills to be taken every evening:—

R.—Pulv. camphoræ,
Ext. lactucæ, aa ℥ij. .
M. ft. pil. xx.

If small abscesses form in the part of the canal occupied by the chancre, care must be taken to open them early; finally, when the inflammatory complications are quieted, injections should be made in the urethra of aromatic wine, at first diluted with an equal quantity of a decoction of poppy-heads, and afterwards pure, if it do not excite irritation. A solution of tartarized iron is also very good.

When the chancre is situated at the opening of the canal, so as to be seen, the treatment directed for other chancres is applicable to it; only it is very useful, in case the patient can bear it, to keep a little cylinder of charpie, soaked in the lotion that is used for the dressing, between the lips of the meatus, so as to prevent their coming in contact.

With regard to the gonorrhœa which accompanies the chancre in such cases, when dependent solely upon the latter, it disappears with it; or, when it is a concomitant affection, it subsides under the use of antiblennorrhagics, which should be employed at the same time with the other treatment.

In cases where chancres are situated in the deep parts of the vagina, on the os tinæ, or within the uterine cavity, the parts should be exposed at each dressing, by means of a speculum, so as to enable us to cauterize the ulcers and make the necessary topical applications. With regard to chancres of the inferior part of the rectum and of the anus, they demand the greatest cleanliness and repeated dressings, especially after the stools, which should be made easy in every possible way. The stools should also be preceded, if possible, by a small, strongly mucilaginous enema, so that the hard feces may not fret the diseased parts. This precaution is almost indispensable, and should be omitted only in case the passage of the clyster-pipe—which, by the way, should be of India rubber—excites more pain than the passage of the feces. Dressings are maintained in this part by means of a small mesh; or when the presence of a foreign body excites too much spasm and pain, they may be simply inserted flatwise against the affected membrane, or the fluid may be injected. We must be careful not to repeat the error which has been made of mistaking ulcers of this nature for simple fissures, and excising them, which does not fail to extend the disease.

2. *Superficial Chancres.*—In most cases these chancres present no peculiar indication. When they are situated on the glans or prepuce, and complicated with balanitis, they may be mistaken, in case they are not indurated, for simple erosions accompanying this catarrhal inflammation, but then superficial cauterization and the interposition of fine linen between the glans and prepuce, suffice to make them disappear in a few days; if they resist, they are to receive the complete treatment for chancres above directed.

3. *Indurated Chancres.*—Induration, an essential property of the classic Hunterian chancre, should never be lost sight of in treating

venereal ulcers; for though it is undoubtedly true that the chancre in this case may be cured by various means, and that it sometimes cures itself without the assistance of art, it is none the less true that, in most cases, the induration remains after cicatrization of the ulcer, and it is well known what will then happen. It is rare for much inflammation or pain to complicate this variety of chancre, and the treatment should be directed chiefly with reference to the induration. In the most simple cases, indurated chancres should be dressed two or three times a day with fine charpie smeared with a thin coating of the following ointment:—

R.—Hydrarg. chloridi mitis gr. xv ;
Unguenti opii, vel ung. cucumis sativi, ℥j.—M.

If there be much suppuration, this dressing should be preceded by a lotion of the aromatic wine; and if it still continue too abundant, the wine should be used alone.

But if nervous irritability and inflammation be present, and the molecular gangrene extend, we should use in preference a concentrated solution of opium, and employ emollients and antiphlogistics at the same time, until the ulcer is restored to a more simple state.

In small indurated chancres, cauterization is much less efficacious than in other varieties, for it cannot reach the whole disease; still, the application of nitrate of silver is not without benefit; it favorably modifies the surface, often stops the progress of the gangrene, and in the reparative stage suitably represses the granulations, which, in this form, have sometimes a tendency to become fungous and vegetate. It is proper to say that nitrate of silver is injurious to this variety of chancre, only so far as it is misapplied.

With regard to mercurial ointments directed against the induration remaining after cicatrization of the chancre, though they are often successful, it should be understood that, in some cases, more particularly when applied to mucous surfaces, they soon excite irritation, and bring back the stage of ulceration, especially when the ointment is rancid.

But though skilful local treatment is frequently sufficient for the complete cure of indurated chancres, *yet, in the majority of cases, a cure by these means is very slow, and even when once obtained is only imperfect.* The difficulty of radically curing indurated chancres by ordinary remedies, and the good effects of mercurial treatment, are the principal arguments which have led this chancre to be considered as the only type of primary syphilis, and mercury as its only specific.

4. *Diphtheritic, or Pultaceous Phagedenic Chancres.*—The causes which give rise to this variety of chancre should be carefully studied. The patient's residence is often unhealthy, cold, and moist, and if he changes it for the better, his disease improves. In this way, chancres contracted in warm countries and brought to a northern climate, are often aggravated in a frightful manner; but when transported from north to south, they frequently heal rapidly and favorably.

In this variety of chancres, we frequently find some coexisting affection of the viscera, under the influence of which it seems to be developed. As we have already said, it is most commonly some derange-

ment of the digestive organs, and then we should direct our treatment principally against this cause ; if it be allowed to go on, or be aggravated by bad treatment, we must not hope to cure the syphilitic ulcer which depends upon it.

While we fulfil all the therapeutical indications which may be presented by other pathological affections, such as scrofula, scurvy, dartrous diseases, &c., which often complicate the variety of chancre which we are now considering, we must beware of attributing the rapid and untoward progress of the ulcer to the greater intensity of the virus ; this is a common error, which does much harm, by inducing those practitioners who follow exclusively the old ideas on this subject, to resort promptly and energetically to the asserted specific, and to administer mercury in doses proportioned to the strength of the virus which they wish to neutralize.

I feel authorized to assert that, with a very few exceptions, the common use of mercurial dressings externally, and mercurial preparations internally, are injurious to the extreme in a sloughing or diphtheritic chancre ; and the more so, since this chancre, not being indurated, is oftener complicated with inflammatory symptoms and nervous irritability. Indeed, it is not uncommon to see these ulcers, when on the point of passing into the reparative stage, become very much worse under the influence of this treatment, and from being limited and regular, become phagedenic and serpiginous, simply from the effect of mercurial treatment.

Whatever the origin of a chancre of this form may be, whether it succeed a chancre of the skin or of the mucous membrane, or a virulent bubo, the most favorable treatment, and the one which is most frequently and promptly followed by success, consists in the combined use of cauterization and the local application of aromatic wine, or especially the solution of tartarized iron. Cauterizations with monohydrated nitric acid should be made to penetrate deeply, and should be repeated in some cases twice a day, so as to follow the disease in its progress. The dressings should be repeated in the same way, for the secretion is very abundant, and should be often removed. In some patients, the ulcer is made to heal only by irrigating it almost constantly.

Care must also be taken not to tear or scratch the skin in changing the dressings ; each new rent is inoculated, and every abrasion of the skin favors the absorption of the virus and the extent of the disease.

When the local inflammation is very acute, it has been advised to apply leeches within the ulcer ; I myself disapprove of this treatment, as its results are far from having the advantages that some practitioners attribute to it ; and besides the difficulty of making these animals take hold on an ulcerated surface, their bites extend the ulcers to the depth of the divided tissues. With still stronger reason, we should abstain from applying them in the neighborhood of chancres ; for each bite with which the pus comes in contact forms a fresh ulcer. When the local inflammation requires depletion, leeches should be applied at some distance and in non-dependant parts, and their bites should afterwards be protected by compresses soaked in lead water, to preserve them

from contact with the pus, until they are completely healed. Again, in cases of inflammatory complications, starch or milk poultices, warm mucilaginous baths, with diet suited to the general and local symptoms, absolute rest and diluent drinks, soon produce favorable results.

These chancres may be attended with great irritability and pain, both with and without inflammation; in both cases, so long as these symptoms last, preparations of opium should be used externally and internally. The following local application should be made:—

R.—Extracti opii ʒj;
Aque lactucae ʒvj.—M.

But here, again, cauterization with nitrate of silver is a powerful auxiliary. We must beware of allowing ourselves to be deceived by erroneous ideas, and must continue the application of the caustic in spite of the pain and inflammation. In most cases, nitrate of silver is the most powerful sedative and the most certain *antiphlogistic*, when well applied. Every day the students following my clinique convince themselves of this truth, and hear patients request to be cauterized. The severe pain that it excites for a moment on the application of the caustic soon lulls, and gives place to a sensation of ease, such as is sought for in vain by other treatment.

Whatever may be said on the subject, there are but few exceptions to this rule, and only a few cases are met with in which it is necessary for a time to omit the combined application of these means, substituting fatty dressings, and more particularly opiated cerate.

However, a phagedenic chancre may continue to extend, or remain in *statu quo* and show no tendency to heal. When we cannot discover the cause of the obstinacy of such cases, we may still sometimes succeed with carrot poultices, warm melted wax, or digestive ointments. The most powerful caustics are sometimes used with benefit in such cases, as butter of antimony, caustic potash, the arsenical paste of Rousselot or *frère Côme*,¹ and the actual cautery applied directly or objectively.² I have employed Vienna paste, and especially monohydrated nitric acid, with success.

But frequently in the phagedenic variety of chancre, the edges of the ulcer are so undermined and thinned, that it is an impossibility and a mere loss of time to attempt to cure it so long as this state of things continues. The affected tissues should be destroyed; but to act efficaciously and promptly, it is important to establish some distinctions. When the ulceration follows an abscess, the edges may be extensively undermined, and the skin very thin from the confinement of the pus, without having assumed the phagedenic form in the sense that we attach to the expression; whilst in other cases it may follow this abnor-

¹ Formula for Rousselot's arsenical powder (*French Codex*):—

R.—Acidi arseniosi ʒj;
Sanguinis draconis,
Hydrarg. sulph. rubri, aa ʒij.—M.

This powder is made into a paste at the time of using it by mixture with a little saliva or mucilage.—Ed.

² Objective cauterization consists in holding the cautery at a short distance from the part to be cauterized.—Ed.

mal course. In case there is no true phagedena, no matter what the extent of the tissues to be sacrificed may be, a knife, or better still, curved scissors, may be used to remove them freely, so as to give the wound the most favorable form for cicatrization; but we should, as much as possible, avoid producing any deformity, which, in certain regions, remains an indelible witness of a disease, even the old attacks of which it is important to conceal. But the use of the knife is prejudicial in the extreme when we have in hand a progressing phagedenic ulcer; far from limiting the disease, it aggravates and increases it, unless the bleeding wound be immediately cauterized; but it is better in these cases to use caustics alone, and Vienna paste in preference to all others. With this caustic we may not only clearly limit the parts to be removed, but possibly destroy completely the virulent surface, or at least protect the new edges of the ulcer from immediate inoculation, by the interposition of an eschar and by a kind of vital reaction, the absence of which, in some cases, is one of the principal causes of the progress of the ulceration.

But, following the rule which I have previously laid down, must we invariably abstain from the use of mercurials and the various remedies recommended as anti-syphilitics? Though it is undoubtedly true that in the great majority of the cases before us, mercury, sudorifics, &c., are more prejudicial than useful, still, there are instances in which they are the only means that produce a good effect. This fact is often proved even in the practice of those who have born the bitterest hate to mercurials. But is it possible, in the present state of science, to point out precisely the instances in which mercury is useful or indispensable? So far as I know, such cases have no characteristic mark. But when the disease goes on in spite of the means indicated above, as a last resort, I employ the treatment which has so long been regarded as specific. I first apply it in local applications, and then as a general agent given internally or by frictions through the skin; afterwards, according to the effect obtained, I continue the local application, or the general treatment alone, or both together, if amelioration takes place, or suspend them if the disease become worse under their influence. Whenever a person, following the practice of the old school, thinks that he should commence with mercurials, a course which I do not recommend, he should at least beware of proceeding blindly, and should suspend his treatment as soon as he finds the results unfavorable.

With regard to other so-called anti-syphilitic agents, they may be used when there is need of general tonics or stimulants to act on the digestive tube, the skin, the urinary passages, &c. In the same way, emollients and local or general antiphlogistics are very often called for, and are also efficacious when understandingly and suitably employed. The internal treatment which has lately given me the most favorable results is the administration of the tartrate of iron and potash, in doses of from two scruples to three drachms a day, in the form of solution or in syrup.¹

¹ The curative influence of an attack of erysipelas, supervening upon a phagedenic ulceration, is often remarkable. Ricord states that he has seen two enormous phagedenic chancres, which had resisted all treatment, get well after being thus modified.—Ed.

5. *Gangrenous Phagedenic Chancres from Excessive Inflammation.*—The inflammation which gives these chancres their peculiar form should be the principal object of treatment. It cannot be too often reiterated, that in these cases the original cause of the disease should for a time be forgotten. How many accidents do we see result from mercurial treatment, used unseasonably and empirically, and directed against the specific cause, in spite of the complication which contraindicates it! I repeat again, the element to contend against, the symptom which for a time constitutes the principal disease, is the inflammation. All our remedies should be directed against this, and should be proportioned to its intensity. If, in spite of our rational and sound practice, gangrene supervene, it requires no other treatment than ordinary cases entirely foreign to syphilis. Other indications present themselves only after these symptoms have disappeared, leaving the chancre under one of the forms previously mentioned; but generally the chancre is then replaced by a simple wound, which ordinary local means lead to rapid cicatrization.

Whenever any variety of phagedenic chancre perforates the frænum, and produces a fistulous passage, isolating portions of the tissues, the parts thus separated and ulcerated should be divided or excised; their mutual contact keeps up the morbid state, and the position of the parts prevents adhesion. For example, when the frænum is perforated, a cure is obtained in half the time by excising it with small curved scissors; one blade of the scissors is passed through the opening and the bridle severed close to the glans; then the remaining portion adherent to the prepuce is cut off, and the ulcerated surface and the bleeding tissues are exposed and carefully cauterized.

In order to avoid the annoying hemorrhage after section of the frænum, which cauterization does not always promptly stop, I previously pass two threads through the perforation, tying one next to the glans, and the other next the prepuce, and then cut between the two ligatures.—RICORD.]

§ 3. *Of the Treatment of Phimosis in consequence of or attended with Chancre.*

From the history which I have given of the disease, we must see that a phimosis may be of two kinds; one natural, with the disease superadded, the other brought on by disease. The first may be increased by the disease; but if otherwise, it is not so troublesome as the other. Such as arise from the disease, I have observed, depend upon the peculiarity of the constitution. In either case it is often not practicable to apply dressings to the chancres or the inside of the prepuce.

A phimosis should be prevented, if possible; therefore, upon the least signs of a thickening of the prepuce, which is known by its being retracted with difficulty and pain, the patient should be kept quiet; if in bed, so much the better, as in an horizontal position the end of the penis will not be so depending, but may be kept up. If confinement in bed cannot be complied with, then the end of the penis

should be kept up to the belly, if possible; but this can hardly be done when the person is obliged to walk about, for the extravasated fluids, descending and remaining in the prepuce, contribute often more to render the prepuce incapable of being drawn back than the inflammation itself.

When the diseased phimosis completely takes place, the same precautions may be followed; but as the sores cannot be dressed in the common way, we must have recourse either to dressings in form of injections, or to the operation for the phimosis. If we use injections only, they should be often repeated, as they are only temporary applications.

The dressings, in form of injections, should be mercurial, either crude mercury rubbed down with a thick solution of gum Arabic, which will assist in retaining some of the injection between the glans and prepuce; or calomel with the same, and a proportion of opium. In the proportion of these no nicety is required; but if a solution of corrosive sublimate is made use of as an injection, some attention is to be paid to its strength. About one grain of this to an ounce of water will be as much as the sensation of the part will allow the patient to bear, and if this gives too much pain it may be lowered by adding more water.

After the parts are as well cleaned as possible with this injection, it will be necessary to introduce other mercurial applications of some kind, to remain there till the parts want cleaning again, which will be very soon. Such as are mentioned before will answer this purpose very well; but I have my doubts about the propriety of using any irritating medicines or injections in such cases.

As often as he voids his urine the patient may wash the parts, by pressing the orifice of the prepuce together, so as to oblige the water to run back between the prepuce and glans; and immediately after this the patient should use the mercurial applications, otherwise this operation of washing may do harm, as it will wash away the former application of mercury; but in many cases the parts are so sore as not to allow of this practice.

A poultice of linseed meal alone, or of equal parts of this and bread, should be applied. This poultice should be made with water, to which one-eighth of laudanum has been added. But previous to this, and immediately after the cleaning, it would be very proper to let the penis hang over the steam of hot water, with a little vinegar and spirits of wine in it, which is the neatest way of applying fomentations.

The oftener this is practised the better, for thus, a mercurial application is kept in contact with the diseased parts a greater number of the hours out of the twenty-four than otherwise could be were the matter allowed to lie on the parts.

When to the above mentioned symptoms a bleeding of the chancre is added, I do not know a more troublesome complaint, because here the cells or veins have no great disposition for contraction.¹ Oil of

¹ I suspect that, where chancres bleed profusely, the blood comes either from the glans, when there are chancres there, or from the spongy substance of the urethra,

turpentine gives the best stimulus for the contraction of vessels of all kinds; but where bleeding arises from an irritable action of the vessels, which is sometimes the case, then sedatives are the best applications. Whatever is used in such a state of the prepuce must be injected into the part.

When, in consequence of the treatment, the inflammation begins to go off, and the chancres to heal, it will be necessary to move the prepuce upon the glans as much as they will allow of, to prevent adhesions, which sometimes happen when there have been chancres on both surfaces opposite to each other. Indeed, the practice here recommended is such as will in general prevent such consequences.

If this has not been properly attended to, and the parts have grown together, the consequences may not be bad; but it must be very disagreeable to the patient, and a reflection upon the surgeon.

I have seen the opening into the prepuce so much contracted from all these internal ulcers healing and uniting, that there was hardly any passage for the water. If the passage in the prepuce so contracted be in a direct line with the orifice of the urethra, then a bougie may be readily passed; but this is not always the case; it often happens that they are not in a direct line; therefore an operation becomes necessary. The operation consists in either slitting up part of the prepuce, or removing part of it; but as these parts have become very indistinct from the adhesions, either the slitting it up, or removing part of it, becomes a difficult operation. Whenever the urethra is discovered, or can be found out by a bougie, that is to be introduced, and its application repeated till the passage becomes free, and has got into the habit of keeping so.

I observed formerly that this tumefaction sometimes produced a confinement of the matter formed by the chancre, and that while this effect lasted, no subsiding of the inflammation or tumefaction could take place; that, therefore, those diseases continued to exist, and that the part thus circumstanced came under our definition of an abscess; that is, the formation of matter in a state of confinement. Although it never has been considered in this light, yet the necessary treatment shows it to be such. This consists in laying it open from the external orifice to the bottom where the matter lies, as in a sinus, so as to discharge it. However, the intention annexed to this practice was not to allow of the discharge of the matter of the sore, but to admit of the applications of dressings to it, for it has been recommended and practised where there was no particular confinement of matter, which I have not found to be necessary merely for that purpose, as we are in possession of an internal remedy; and if the opening produces no other good but the allowing of the application of dressings, it is not so material, because the sores may be washed with an injection through a syringe.

where the chancre has begun about the frænum, for we seldom see profuse bleedings from the prepuce when its inside is the seat of the chancre, and can be exposed; but, indeed, in such cases, the inflammation is not violent.

§ 4. *Of the common Operation for the Phimosis produced by Chancres.*

The common operation for the phimosis is slitting the prepuce nearly its whole length, in the direction of the penis; but even this is sometimes thought not sufficient, and it is directed to cut the prepuce in two different places, nearly opposite to one another. When it was thought proper to be done in this way, it was imagined that it was seldom necessary to cut the whole length of the prepuce. It will in some degree depend on circumstances which practice is to be followed. If it is a natural phimosis, without tumefaction, and the chancre is near the orifice of the prepuce, which in some cases it most probably will be, as the glans is not denuded in coition so as to have chancres deeper seated, then it may be necessary only to go as far as the chancres extend.

From the common situation of the chancre, this disease of the phimosis arises more commonly from the tumefaction of the parts; and from the idea I have endeavored to give of the inconveniences arising from this phimosis, where the chancres are placed behind the corona, producing a confinement of the matter behind the glans, slitting open the prepuce a little way cannot be sufficient, for in such cases it must be exposed to the bottom, or no good can arise from the operation.

Although this operation will not take off the tumefaction of the prepuce so as to allow it to be brought back, yet it will allow of a free discharge of the matter; and also, in some cases, it will allow of dressings being applied to the sores, but not in all, for the tumefaction will not allow more of an inversion of the prepuce than before, and in such the sores cannot have dressings applied to them.

In many cases, it will be found that so violent an operation is improper, for it often happens that, while the inflammation is so very considerable, there is danger of increasing it by this additional violence, of which mortification may be the consequence; while, on the other hand, there are cases where a freedom given to the parts would prevent mortification, so that the surgeon must be guided by the appearances and other circumstances. Besides these reasons for and against the operation arising from the disease itself, it will not always be consented to by the patients themselves, for some have such a dread of operations that they will not submit to cutting instruments; however, in those cases where the matter is confined, it will be absolutely necessary to have an opening somewhere for the discharge of it. This is often produced by the ulcerative process going on on the inside, which makes an opening directly through the skin, laterally, which affords a direction for the surgeon; therefore, the opening may be made directly into the cavity of the prepuce, through the skin, on the side of the penis, by a lancet; or a small caustic may be applied there, for which the lapis septicus is the most convenient.

The opening will allow of the discharge of the matter, and also admit any proper wash to be thrown in. But this opening should not be a large one, as in many cases the consequence of this lateral opening proves very troublesome; for, from the tumefaction of the prepuce,

the glans is squeezed on all sides, and rather more backwards upon the body of the penis than in any other direction, by which means it is often forced through this opening, whereby the glans is directed to one side, and the prepuce to the opposite, having a forked appearance. Besides, this state of the parts tightens the skin of the penis round the root of the glans, acting there somewhat like a paraphimosis, and sometimes makes the whole prepuce mortify and drop off, which is often a lucky circumstance; but if this is not the consequence, then amputation of the prepuce becomes necessary; however, this should not be done till all inflammation is gone off, and the chancres are cured, when probably the tumefaction of the prepuce will have considerably subsided.

A mortification of the prepuce is sometimes a consequence of chancres when attended with violent inflammation, even without any previous operation; and I have seen cases where the glans and part of the penis have mortified, while the prepuce has kept its ground. But I should suspect in all such cases that there is some fault in the constitution, and that the inflammation is of the erysipelatous, not of the true suppurative kind.

I have seen the mortification go so far as to remove the whole of the diseased prepuce, and the parts have put on so favorable an appearance that I have treated it as a common sore, and no bad consequences have happened. In this case the disease performed what is often recommended in other diseases of this part, that is, circumcision; but this is not always to be trusted to, for if absorption of the venereal matter has taken place previous to the mortification, a lues venerea will be the consequence, although the parts heal very readily.

§ 5. *Of the Constitutional Treatment of Phimosis.*

In those cases where violent inflammation has attacked the seat of a chancre, producing phimosis as before described, and often so as to threaten mortification, a question naturally occurs, what is to be done? Is mercury to be given freely to get rid of the first cause? or does that medicine increase the effect while it destroys the cause? Nothing but experience can determine this.

I should incline to believe that it is necessary that mercury should be given, for I am afraid our powers to correct such a constitution, while the first cause subsists, are weak. However, on the other hand, I believe the mercury should be given sparingly; for if it assists in disposing the constitution to such symptoms we are gaining nothing, but may lose by its use. I therefore do suppose that such medicines as may be thought necessary for the constitution should be given liberally, as well as the specific. Bark is the medicine that probably will be of most general use; opium in most cases of this kind will also be of singular service. The bark should be given in large quantities, and along with it mercury, while the virus is still supposed to exist. Or if the inflammation has arisen early in the disease, they may be then given together, so as to counteract both diseases, and not allow the inflammation to come to so great a height as it would otherwise do

if mercury was given at first alone. This inflammation may be so great in many cases, or be so predominant, that mercury may increase the disposition, and therefore become hurtful. Where this may be supposed to be the case, bark must be given alone.

[G. G. B.—In many cases of phimosis mercury is not necessary, because in many cases the affection arises not from a venereal chancre, but from a common sore; as, for instance, from that sort of ulceration which the author has denominated gonorrhoea of the glans and prepuce. When the sore is a chancre mercury must be used, and the sore will seldom be overcome without it, because washes and other topical applications, as well as diaphoretics and purgatives internally, though they exercise a certain degree of power over the inflammation, do not reduce the genuine venereal thickening. If the surgeon is in doubt as to the real nature of the sore within, he may suspend the use of mercury till the inflammation has been partly subdued by other means, and he has acquired evidence of its true character, from the obstinacy of the contraction, or the distinct perception of the chancreous induration. But the presence of active inflammation forms no objection to the employment of mercury. On the contrary, under such circumstances, mercury will in all cases be beneficial. Even when the prepuce is sloughing, it is not in general contra-indicated, provided the bright arterial color of the part, and the state of the pulse and of the skin, show that the arterial action is above the natural standard. The sloughing in such cases arises either from the confinement of matter within the prepuce, or from the excessive violence of the inflammation. In the first case it will be stopped by making an opening with a lancet at the part where the abscess is pointing; in the second case it will be most effectually limited by quickly subduing the inflammation; and this may be best accomplished by absolute rest, by the internal use of antimony and mercury, and by the frequent injection of saturnine washes under the prepuce.]

[RICORD.—It is not always easy to treat phimosis; and it seems to me that Hunter, in spite of his good precepts, has not pointed out precisely enough the course to be followed.

No matter what form of venereal disease complicates phimosis, if it be attended with much inflammation, we should first resort to antiphlogistic treatment. Venesection is frequently indicated when there is general reaction; but in most cases leeches are sufficient. They should be applied over the symphysis pubis, to the perineum or the inguino-crural regions, and never on the penis. Local and general baths are very useful; poultices favor œdema and are generally injurious; the most that we can do is to apply emollient and sedative fomentations. Injections of emollient decoctions, and, better still, of a solution of thirty grains of nitrate of silver to three ounces of distilled water, in cases of balano-posthitis, should be frequently made between the glans and prepuce; a crayon of nitrate of silver may also be passed between the glans and prepuce, and the parts superficially cauterized. Rest, strict diet, diluent drinks, and an elevated position of the penis are to be joined to these means. I should also add to this treatment the administration of laxatives, among which mercurials should be

preferred; Belloste's pills,¹ calomel, and particularly the sedatives of the genital organs; camphor combined with opium is of great service.

If the inflammation continue to progress, if there be symptoms of strangulation of the part inclosed within the prepuce, accumulations of pus, danger of perforation, and especially danger of gangrene, or if mortification has already taken place, we must resort to an operation. But an operation, which some persons regard as the first thing to be done, should be performed, as Hunter directs, only with great reserve. If there was no congenital or permanent phimosis before the disease, we must not operate too hastily; and the same rule should be observed if there be chancres. In the latter case, especially, it should be remembered that the benefit derived from evacuation of the pus and removal of the stricture, does not always compensate for the inevitable inconvenience arising from inoculation of the wound and extension of the chancre. But in case of congenital phimosis, which of itself requires an operation, or when there is merely balanitis, or finally, when the symptoms become severe, we must operate, whatever the concomitant circumstances may be.

With the above exceptions, we should be more and more careful in resorting to the knife. Rest, diuretics, injections, and astringent fomentations readily subdue cedematous phimosis, which, in the most obstinate cases, rarely resists gentle and methodical pressure by means of small strips of *emplastrum de Vigo cum mercurio*. With regard to phimosis dependent on specific indurations, it yields only to the special treatment for indurated chancres. This is the only case in which the local or general use of mercurials is justifiable and can be made with success.

When an operation becomes necessary, the method of performing it is not unimportant. In congenital or permanent phimosis, circumcision gives the best results, and should always be preferred. If circumcision cannot be performed on account of the state of the parts, we should never resort to partial operations, as Hunter recommends, especially if they are to include only a small portion of the prepuce, and permanent phimosis previously existed. Such operations are afterwards followed by cicatrices, which tend still farther to diminish the preputial orifice. In the great majority of cases, the prepuce should be incised its whole length. In any case, where there are chancres, indurations, or bad cicatrices, they should be included in the parts removed.—RICORD.]

¹ Formula for Belloste's pills: (*Formulaire Magistral*.)

R.—Hydrarg. chloridi mitis,
Pulveris aloes, aa gr. xij;
Pulveris rhei gr. vj;
Pulveris scammonii gr. iv;
Piperis nigri gr. ij.—M.
Ft. pil. xxxvj.

Twelve of these pills are given as a cathartic; two as an alterative.—ED.

[EDITOR.—The following are the most approved methods of circumcision :—

M. Ricord's Method.

1. The penis being relaxed, and no traction exercised upon the prepuce, the course of the intended incision is traced with ink upon the skin, following the oblique direction of the base of the glans and a little in front of it.

2. The prepuce is drawn forwards and grasped from above downwards between the blades of a pair of dressing-forceps just back of the ink line, and the portion of the prepuce in front is excised with a bistoury.

3. The external retracts more than the internal layer of the prepuce, and the latter requires to be cut shorter. For this purpose, it is slit up on its superior surface completely behind the corona, and the flap thus formed on each side excised, together with the frænum if it be too long. The edges of the wound are united by sutures, or better still, with M. Vidal's *serres fines*.

M. Ricord has also invented a pair of fenestrated forceps, to be used instead of the common forceps, and has modified the operation by passing three or four threads through the fold of the prepuce grasped by the forceps and between the fenestræ of the latter, previous to the incision. After making the incision and withdrawing the forceps, each thread is cut in the centre and the divided halves tied, so as to unite the edges of the wound and form twice as many ligatures as there were threads.

The Method of MM. Maisonneuve and Montanier.

1. The prepuce is drawn forwards and seized in front of the glans by dressing-forceps, which are confided to an assistant.

2. The part in front of the forceps is cut off with straight scissors.

The forceps being withdrawn, the skin retracts, leaving the glans covered with the mucous layer of the prepuce.

The mucous layer is now divided longitudinally with the scissors introduced between it and the dorsum of the glans.

4. The two flaps are turned back and kept in contact with the skin by means of *serres fines*, or several points of suture.

The application of the *serres fines* in this and other operations about the genital organs requires some care and nicety; but when the edges of the wound are thus accurately adjusted, without the cellular tissue being allowed to protrude between, the results are more satisfactory than by any other mode of union.]

§ 6. *Of the Treatment of the Paraphimosis from Chancre.*

A prepuce in the state of inflammation and tumefaction, and which has been either kept back upon the body of the penis while inflaming, or pulled back when inflamed, seldom can be again brought forwards while in this state, and therefore becomes also the subject of an operation which consists in dividing the same part, as in the phimosis, only

in a different way, arising from its difference of situation, the intention of which operation is to bring the prepuce, when brought forwards, to the state of a phimosis that has been operated upon. This operation becomes more necessary in many cases under this disease than under the phimosis, because its consequences are generally worse; since, besides the real disease, viz., inflammation, tumefaction, ulceration, &c., there is a mechanical cause producing its effects, by grasping the penis, which can of itself produce inflammation where the prepuce is naturally tight, as has been observed. From whatever cause it arises, it often produces mortification in the parts between the stricture and the glans if it is not removed. This removal sometimes happens naturally by the ulceration of the strictured part, but an operation is generally necessary, and it is more troublesome than in the former case, because the swelling on each side of the stricture covers or closes in upon the tight part, and makes it difficult to be got at.

The best way appears to be to separate the two swellings as much as possible where you mean to cut, so as to expose the neck; then take a crooked bistoury which is pointed, and passing it under the skin at the neck, divide it; no part of the two swellings on the sides need be divided, for it is the looseness of the skin in these parts which admits of their swelling. When this is done the prepuce may be brought forwards over the glans; but as this disease arose from chancres which may require being dressed, and as the state of a phimosis is a very bad one for such treatment, it may be better, now that the stricture is removed, to let it remain in the same situation till the whole is well.

If the paraphimosis has arisen from a natural tightness of the prepuce, and its being forced back by accident, then no particular treatment after the operation is necessary but to go on with the cure as recommended in chancres. It is indeed probable that in consequence of the violence produced by the position of the prepuce as also by the operation, a considerable inflammation may ensue; but as this will be an inflammation in consequence of violence only, local treatment for the inflammation will be sufficient.

But if it is a paraphimosis in consequence of a diseased phimosis, then the same mode of treatment becomes equally necessary as was recommended in the phimosis attended with considerable inflammation; and probably rather more attention is necessary here, as violence has been added to the former disease.

[RICORD.—No attempt should be made to reduce a paraphimosis, when it is consequent upon a previous permanent phimosis; for if we succeeded we should only relieve the symptoms by restoring the congenital malformation, and in most cases at a cost of suffering, which is sometimes ineffectual, and is a hundred times more severe than incision of the stricture would produce. Superficial scarifications, when the parts are oedematous, cold and methodical compression either applied suddenly or continued several hours by means of circular bandages, are almost always sufficient. Besides other well-known methods of forcing the glans through the constricting ring, my learned friend, M. Seutin, of Brussels, has proposed a pair of forceps, the extremities of which resemble two spoons, which grasp the glans, and compress it

more readily, he says, than the fingers of the operator can do.¹ In those cases of paraphimosis which I have elsewhere spoken of as irreducible, we should operate immediately, and, as Hunter says, perform an operation back of the glans similar to that for phimosis. But to make this operation complete and of actual service, it is necessary not only to cut through the whole thickness of the swelling in front of the stricture, but also to divide the skin behind to an extent equal to the length of the glans; in this way, there is no farther necessity of reduction, and there is no danger of a phimosis occurring, and requiring a second operation.—RICORD.]

§ 7. *Of the Cure of Chancres by Mercury given internally.*

While chancres are under local treatment, as before described, it is necessary to give mercurials internally, both for the cure of a chancre and the prevention of a lues venerea; and we may reasonably venture to affirm, that the venereal disposition of chancre will hardly ever withstand both local and internal mercurials.

In cases of chancres where local applications cannot easily be made, as in cases of phimosis, internal mercurials become absolutely necessary, and more so than if they could be conveniently and freely applied externally. However, even in such cases, internal mercurials will in the end effect a cure, so that we need seldom if ever be under any apprehension of not curing such a disease.

In every case of a chancre, let it be ever so slight, mercury should be given internally, even in those cases where they were destroyed on their first appearance. It should in all cases be given the whole time of the cure, and continue for some time after the chancres are healed; for as there are perhaps few chancres without absorption of the matter, it becomes absolutely necessary to give mercury to act internally, in order to hinder the venereal disposition from forming.²

How much mercury should be thrown into the constitution in the cure of a chancre, for the prevention of that constitutional affection, is not easily ascertained; as there is in such cases no disease actually formed so as to be a guide, it must be uncertain what quantity should be given internally. It must in general be according to the size, number, and duration of the chancres. If large, we may suppose that the absorption will be proportioned to the surface, and, if long continued, the absorption will be according to the time; and if they have been many, large, and continued long, then the greatest quantity is necessary.

The circumstances, therefore, attending the chancre, must be the guide for the safety of the constitution, especially in those cases where some stress in the cure is laid upon the external remedy.

¹ The chief advantage of M. Seutin's forceps is, that they allow the prepuce to be drawn over them, while the compression is still continued.—ED.

² Added: "When chancres are attended with a great degree of inflammation and swelling of the neighboring lymphatic glands, there are peculiarities in the constitution which are unfavorable to the use of mercury; it should, therefore, in such cases be used with caution, and joined with such remedies as will make it less irritating to the constitution."—HOME.

The mercury given to act internally must be thrown in either by the skin or stomach, according to circumstances.

The quantity in either way should be such as may in common affect the mouth slightly, which method of giving mercury will be considered hereafter.

When the sore has put on a healthy look, when the hard basis has become soft, and it has skinned over kindly, it may be looked upon as cured.

But in very large chancres, it may not always be necessary to continue the application of mercury, either for external or internal action, till the sore is healed; for the venereal action is just as soon destroyed in a large chancre as it is in a small one, for every part of the chancre being equally affected by the mercury, is equally easily cured. But the skinning is different; for a large sore is longer in skinning than a small one. A large chancre, therefore, may be deprived of its venereal action long before it is skinned over; but a small one may probably skin over before the venereal poison is entirely subdued. In the latter case, both on account of the chancre and constitution, it will be erring on the safe side to continue the medicine a little longer, which will most certainly in the end effect a cure; for we may reasonably suppose that the quantity of mercury capable of curing a local effect, although assisted by local applications, or of producing in the constitution a mercurial irritation sufficient to hinder the venereal irritation from forming, will be nearly as much as will cure a slight lues venerea.

I have formerly laid it down as a principle that no new action will take place in another part of the body, however contaminated, whilst the body is under the beneficial operation of mercury; but there are now and then appearances which occur under the cure that will at first embarrass the practitioner. I have suspected that the mercury flying to the mouth and throat has sometimes produced sloughs in the tonsils, and these have been taken for venereal. The following cases in some degree explain this:—

A young gentleman had a chancre on the prepuce, with a slight pain in a gland of one groin, for which I ordered mercurial ointment to be rubbed into the legs and thighs, especially on the side where the gland was swelled, and the chancre to be dressed with mercurial ointment. While he was pursuing this course the chancre became cleaner, the hardness at the base went off, and the pain in the groin was entirely removed. About three weeks after the first appearance of the disease he was attacked with a sore throat, and, on looking into the mouth, I found the right tonsil with a white slough, which appeared to be in its substance, with only one point yet exposed. From my mind being warped by the opinion that these complaints proceeded from the chancre, I immediately suspected that it was venereal; and the only way that I could account for this seeming contradiction, in one part healing while another was breaking out, was, that the healing sore was treated locally as well as constitutionally; while the tonsil, or the constitution at large, was only treated constitutionally, which was insufficient.

Soon after this another gentleman was under my care for venereal

scurfs, or eruptions on his skin, for which he used mercurial friction till his mouth became sore; and in this state he continued for three weeks, in which time the eruptions were all gone, discolorations being left only where the eruptions had been; yet, at the end of three weeks, a slough formed in one of the tonsils, exactly as in the former case. This made me doubtful how far such cases were venereal. I ordered the friction to be let off, to see what course the ulcers would take; the slough came out and left a foul sore. I waited still longer, and in a day or two it became clean and healed up.

The first-mentioned case I did not see to an end; but I learned that the patient continued the mercury and got well, and the ulcer in the throat was supposed to be venereal; but, from the circumstances of the other case, I now very much doubt of that.

It is more than probable that these effects of mercury only take place in constitutions that have a tendency to such complaints in the throat. I know this to be the case with the last-mentioned gentleman; and it is also probable that there may be an increased disposition at the time, either in consequence of the mercury or some accidental cause. I have reason to suppose that mercury, in some degree, increases this disposition, which I shall farther take notice of when treating of the cure of lues venerea.

In the cure of chancres I have sometimes seen, when the original chancre has been doing well and probably nearly cured, that new ones have broken out upon the prepuce, near to the first, and have put on all the appearance of a chancre; but such I have always treated as not venereal. They may be similar to some consequences of chancres, which will be taken notice of hereafter.

As swellings of the absorbent glands take place in consequence of other absorptions besides that of poisons, we should be careful in all cases to ascertain the cause, as has been already described; and here it may not be improper still to observe farther, that in the cure of chancres swellings of the glands shall arise, even when the constitution is loaded with mercury sufficient for the cure of the sores; but then the mercury has been thrown into the constitution by the lower extremity, and therefore there is great room for suspicion that such swellings are not venereal, but arise from the mercury; for a real bubo, from absorption of venereal matter, if not come to suppuration, will give way to mercury rubbed into the leg and thigh. In such cases I have always desisted from giving the mercury in this way when I could give it by the mouth.

[RICORD.—In the preceding section, Hunter's imagination has played a far more important part than careful, practical observation. Most of the propositions which he lays down are, in fact, inferences from theoretical ideas, which are contradicted by every day's experience.

Thus, at the present day, no one but he who abandons himself to blind empiricism will administer mercury in all cases of chancre without distinction. It is an established fact, that many chancres get well without this remedy, and that, far from being always indicated, it is frequently injurious, and should give place to the rational means which are required by the peculiar state of the venereal ulcer.

With the idea that mercury is the only neutralizing agent of the syphilitic virus, men have sought, and still seek, to ascertain the absolute quantity which must be administered to cure primary symptoms. Hunter says that the quantity should be proportioned to the size, number, and duration of the ulcers; but these data are false, whether the disease be regarded as a local affection or capable of exciting constitutional symptoms.

Looking at it as a local affection, it is not true that in all cases the progress of chancres toward a cure is proportioned to their size and number. Some chancres covering a large surface heal very soon; whilst small ulcerations sometimes last much longer. A patient, who has several ulcers, is often sooner rid of them than another who has only one, and these cases are so frequent that they cannot be considered mere exceptions to the rule which Hunter would establish. As to duration, an ulceration which requires mercury will, without doubt, need a larger quantity of it the more time it takes to heal; but that is all.

If, on the other hand, we regard mercurial treatment as a prophylactic against constitutional infection, and endeavor to introduce into the economy a quantity of mercury proportioned to the quantity of the virus absorbed, here, again, neither the size, number, nor duration of the ulcers can serve as guides. In fact, daily experience proves that the frequency, number, and intensity of the secondary symptoms are not proportioned to these conditions of the primary ulcers.

A single chancre, of small size and short duration, is often sufficient to cause constitutional syphilis, which, in very many cases, is not induced by numerous and extensive ulcerations, though they may last a very long time.

The most exact therapeutical indications which we possess are the following:—

All indurated chancres require mercurial treatment, which is then the most powerful and most promptly efficacious means that we possess.

Commencing with an arbitrary dose, it should be increased from day to day, until curative effects are observed, or until mercurial symptoms such as salivation, etc., warn us that the remedy is no longer tolerated.

The absolute quantity required for the whole treatment is to be determined not only by the cicatrization of the ulcer and the disappearance of constitutional symptoms, when they are already developed, but also by the *complete resolution* of the induration, which is the last primary symptom to disappear, and a very valuable guide when present. For it must be understood that, so long as the induration remains, the disease is not cured, no matter what other morbid symptoms have been made to disappear, or what quantities of mercury have been given, or what effects have been produced.

It would doubtless be convenient to be able to say: "For so many lines of surface in a chancre, or for so long a duration, employ so many grains of corrosive sublimate, or so many drachms of mercurial ointment. For the cure of a primary symptom, employ a quantity neces-

sary for the cure of slight secondary symptoms. Continue the treatment after the cure of a small ulcer; suspend it before the cicatrization of a large one; for, in the first case, the venereal poison still exists, while in the second it has been subdued." But the truth is, such rules can have no value for those who understand the course which diseases take, and who know the different phases they present in different individuals.

In cases where we do not have specific induration of the chancre for our guide, mercury should be used only when other syphilitic symptoms require it. And when we are obliged to employ mercurial treatment, we should continue it, if nothing occur to contra-indicate it, not only till the symptoms are perfectly cured, but a long time after; for experience teaches, every day, that the longer it is wisely prolonged, the more securely does it protect from consecutive accidents. Very often six months of uninterrupted treatment are necessary for success! What shall we say, then, of the one hundred and ten pills of Dupuytren, which one of our colleagues announced in the *Bulletin de Thérapeutique*, would always assure a cure?

Mercury acts more powerfully when administered by the stomach than by the skin. It affects the economy in two ways: either as a curative or as a morbid agent. As soon as mercury acts in the latter way, as shown by the appearance of salivation, intestinal irritation, cutaneous irritation, &c., its curative effects are obstructed or completely inverted, so that it may even act sometimes as an adjuvant of the disease, which we wish to subdue.

Some constitutions seem refractory to this metal; and, in these, syphilis generally produces its greatest ravages.

Hunter, too confident in the anti-syphilitic virtues of mercury, and true to his principle that two distinct morbid actions cannot exist at the same time in the system, believes that the symptoms, which appear during the course of mercurial treatment, cannot be venereal. This doctrine, which is so poorly supported by Hunter's reasoning and by the observations which he reports, is very dangerous; since it leads us to attribute to mercury constitutional symptoms, which often require more than ever a continuance of the remedy.

If mercury can produce any subsequent symptoms—which has not been accurately determined—at any rate it is very certain that its action is generally rapid, and that its morbid effects last only while its use is continued. So that we may truly say of mercury, *sublatâ causâ, tollitur effectus*; whilst, in syphilis, the symptoms continue when the remedy is stopped, and improve or disappear as soon as it is resumed. —RICORD.]

[EDITOR.—Whether the treatment of a chancre should be confined to local remedies or include the internal administration of mercury, depends entirely upon whether it is a simple or infecting chancre. The distinguishing characters of these two important varieties have been sufficiently dwelt upon in a preceding note. In the great majority of cases the character of the ulcer and the condition of the neighboring lymphatic ganglia will be

sufficient to establish the diagnosis on the first examination. In other cases it is necessary to wait for a few days to decide; and the instances are extremely rare in which our judgment as to the prognosis of any primary sore must be suspended for any length of time.

The presence of an indurated base to the ulcer and of a *pleiad* of indurated ganglia in the groin indicate that the constitution is already infected, and that a corresponding constitutional course of treatment should be at once commenced and be continued according to the rules to be laid down hereafter. The absence of these symptoms, on the contrary, will show that the disease is purely local, and that local remedies are alone required. In the exceptional cases, in which it is impossible to decide as to the character of the sore, it is better to wait and see if secondary symptoms manifest themselves, than to resort to a mercurial course which may not be required. The lapse of a few months will determine this, since constitutional symptoms always appear within six months after an infecting coitus, and their absence for this period, provided no mercury has been administered, will show that the chancre was a simple one.

The common method pursued by many practitioners, of subjecting every patient who has a chancre, to the use of mercury for two or three weeks, is entirely unjustifiable. Mercury has no special curative action upon primary sores; if it be a specific at all in syphilis, it is only so for secondary phenomena, among which the induration of an infecting chancre should be included. In spite of the opinion of Hunter and the generally received impression to the contrary, we may confidently state that there is no proof whatever that the use of mercury in the early stages of a primary sore offers any obstacle to the absorption of the virus or affords any guarantee against constitutional infection.

It is only in cases of simple chancres that the short course of mercurials so much in vogue, is apparently successful in averting subsequent symptoms; and in this class of chancres, there would be the same immunity without the mercury. A mercurial course of two or three weeks is entirely inadequate to protect the system from the effects of a truly infecting chancre.

But there is another strong objection against the indiscriminate use of mercury in all cases of chancres. It is liable to leave the patient and the surgeon in doubt, whether constitutional infection has taken place or not. If the character of the primary sore has not been determined, and mercury has been administered, we are at a loss to know whether the non-appearance of secondary symptoms for a given time is owing to their being retarded by the treatment, or to the nature of the chancre; and in such a disease as constitutional syphilis, which so profoundly modifies the system and exposes the patient to its manifestations for life, it is not a matter of indifference to know whether one has it or not.

The rules then which we would adopt for the constitutional treatment of chancres are the following :—

I. In indurated chancres, subject the patient to a mercurial course, the same as for secondary syphilis.

II. In simple chancres, abstain from mercury.

III. In case of doubt as to the character of the ulcer, warn the patient of the uncertainty in the case, and keep him under careful observation, until time shall have determined whether the system has been infected or not.—EDITOR.]

CHAPTER IV.

OF THE CURE OF CHANCRES IN WOMEN.

THE parts generally affected with chancres in this sex are more simple than in men, by which means the treatment in general is also more simple; but, in most cases, they require nearly the same, both in the local application of mercury and in throwing it into the constitution. It may be supposed, however, that it will be necessary in many cases to throw into the constitution more mercury than in men, because in general there are more chancres, and the surface of absorption of course larger.

As it is difficult to keep dressings on the female parts, it is proper they should be washed often with solutions of mercury; perhaps corrosive sublimate is one of the best, as it will act as a specific, and also as a stimulant when that is wanted; but in chancres that are very irritable, the same mode of treatment as was recommended in men is to be put in practice. Afterwards, the parts may be besmeared with a mercurial application, either oily or watery, to be frequently repeated, according to the circumstances of the case.

If the ulcers should have spread, or run up the vagina, great attention should be paid to the healing of them; for it sometimes happens that the granulations contract considerably, so as to draw the vagina into a small canal; at other times the granulations will unite into one another, and close the vagina up altogether; therefore, in such cases, it will be necessary to keep some substance in the vagina till the sores are skinned, for which purpose probably lint may be sufficient.

[RICORD.—Chancres are generally neither more numerous nor larger in women than in men, and when they require mercurial treatment, it need not be longer continued in one sex than in the other.

Dressings are very easily kept in place in women.

As to obliteration of the vagina, it must be very rare, for I have never seen it.]

CHAPTER V.

OF SOME OF THE CONSEQUENCES OF CHANCERS, AND THE TREATMENT OF THEM.

AFTER the chancres have been cured, and all venereal taint removed, it sometimes happens that the prepuce still retains a considerable degree of tumefaction, which keeps up the elongation and tightness which it acquired from the disease, so that it cannot be brought back again upon the penis to expose the glans.

For this perhaps there is, in many cases, no cure; however, it is necessary to try every possible means. The steam of warm water, fomentations with hemlock, and also fumigations with cinnabar, are often of singular service in this case.

But if the parts still retain their size and form, it may be very proper to remove part of the overgrown prepuce; how much, must be left to the discretion of the surgeon. I should suppose that all that part which projects beyond the glans penis may be cut away.

The best way of removing it is by the knife; but great care should be taken to distinguish first the projecting prepuce from the glans. When this is perfectly ascertained, the penis being held horizontally, an incision may be made on the upper surface, and followed down with caution; because if the incision should be too near the glans there may be danger of cutting it.

The parts may be allowed to heal with any common dressings, as it is to be considered as a fresh wound; however, it will not heal so readily as a fresh wound made in an entirely sound part, because the operation consists in taking away only a superfluous part of a diseased whole; and what is left is diseased, but not so as to produce any future mischief.

Some care may be necessary in the healing of the parts, for it is very possible that the cicatrix may contract, and still form a phimosis. This will be best prevented by the patient himself if he brings the prepuce often back upon the penis; but it should not be attempted till the part is nearly healed; and it is to be performed with great care, and slowly.¹

§ 1. *Of Dispositions to New Diseases during the Cure of Chancres.*

Chancres, both in men and women, often acquire new dispositions in the time of the cure, which are of various kinds, some of which retard the cure, as described, and, when the parts are cured, leave them tumefied and indolent, as in the enlarged prepuce. In others a new disposition takes place, which prevents the cure or healing of the parts, and

¹ See Ricord's addition on page 311.

often produces a much worse disease than that from which it arose. They also become the cause of the formation of tumors on these parts, which will be taken notice of hereafter.

Such new dispositions take place oftener in men than in women, probably from the nature of the parts themselves. They seldom or never happen but when the inflammation has been violent, which violence arises more from the nature of the parts than the disease, and therefore belongs more to the nature of the parts or constitution than to the disease. However, I can conceive it may also take place where the inflammation has not been violent.

In general, they are supposed to be cancerous, but I believe they seldom are, although it is not impossible that some may be so.

Of this kind may be reckoned those continued and often increased inflammations, suppurations, and ulcerations, becoming diffused through the whole prepuce, as also all along the common skin of the penis, which becomes of a purple hue; the cellular membrane everywhere on the penis being very much thickened, so as to increase the size of the whole considerably.

The ulceration on the inside of the prepuce will sometimes increase and run between the skin and the body of the penis, and eat holes through in different places till the whole is reduced to a number of ragged sores. The glans often shares the same fate, till more or less of it is gone; frequently the urethra at this part is wholly destroyed by ulceration, and the urine is discharged some way farther back. If a stop is not put to the progress of the disease, the ulceration will continue till the parts are entirely destroyed. I suspect that some of these cases are scrofulous.

As this is an acute case, immediate relief should be given, if possible; but as it may arise from various peculiarities in the constitution, and as these peculiarities are not at first known, no rational method can be here determined. The decoction of sarsaparilla is often of service in such cases, but requires to be given in large quantities.

The German diet-drink¹ has been of singular service; I knew a case of this kind cured by it, after every known remedy had been tried. The extract of hemlock is sometimes of service. I have known sea-bathing cure these complaints entirely. A gentleman came from Ireland with a complaint of this kind, and after having tried every common and known method without effect, as sarsaparilla, hemlock, German diet-drink, and after having used a great variety of dressings (which were all at last laid aside, and opium only retained

¹ The following formulæ have been much recommended as diet-drinks: Take of crude antimony, pulverized, tied up in a bit of rag, pumice-stone, pulverized, tied up in the same, of each one ounce; China-root, sliced, sarsaparilla-root, sliced and bruised, of each half an ounce; ten walnuts, with their rinds, bruised; spring-water, four pints, boil to half that quantity; filter it, and let it be drunk daily in divided doses.

Take sarsaparilla, Saunders-wood, white and red, of each three ounces; liquorice and mezereon, of each half an ounce; lignum rhodium, guaiacum, sassafras, of each one ounce; crude antimony, two ounces; mix them and infuse them in boiling water, ten pints, for twenty-four hours, and afterwards boil them to five pints, of which let the dose be from a pint and a half to four pints a day.

to quiet the pain), he bathed in the sea and got well. It may be sometimes necessary to pass a bougie, to hinder the orifice of the urethra from closing or becoming too small in the time of healing in such cases.

[G. G. B.—The description of the author is so vague that it is difficult to know with certainty what species of sore he here intends to designate. But it is probable that he chiefly refers to those sores which are called *phagedenic*, and which are of sufficient importance to require a particular description.

The name *phagedenic* has been given to them because they have been supposed to be the same with the ulcers described by Celsus under the name of *phagedæna*. Though the correctness of this supposition may be questioned, yet there is a convenience in retaining a name which not unaptly characterizes the ulcer, whether we regard the occasion, the rapidity of its progress, or the most remarkable features which distinguish its aspect.

It can scarcely be doubted that *phagedenic* ulcers arise from the application of a virus, since there is no satisfactory evidence that they ever occur where the party has not been exposed to infection, and since they are as constantly followed by secondary symptoms as the genuine forms of chancre which have been previously described. Nor, though much attention has been paid to the subject, has it been possible to trace such a constant distinction as would establish that the virus which produces them is different from that which gives origin to the common Hunterian chancre. The characters of the *phagedenic* sore are very different from those of a common chancre; and if there is a diversity of virus, this diversity should be constant, and should be capable of being traced equally in the giver and the recipient; in the party from which the infection is derived, as well as in that to which it is communicated. But it has not been found possible to ascertain that this is the case. On the contrary, the *phagedenic* sore has in several instances appeared to have been derived from individuals who have suffered from the common forms of chancre.

The *phagedenic* sore begins with slight tumefaction of the part and slight excoriation of the surface. This excoriated surface soon becomes foul, being covered with a yellowish slough, and discharging a watery sanies of a brownish tinge. As the sore destroys the part on which it is situated, the surface becomes uneven, and the outline of the sore irregular in shape, and, as it were, scalloped. These appearances are produced by the mode of progress, which is not regular and uniform in every direction, but proceeds more rapidly in some parts than in others. The central part, and perhaps one of the edges, then ceases to spread, and becomes clean, while on other sides the foul character remains, and the sore continues to extend. The part which is spreading is always somewhat tumefied, but the tumefaction is that of common inflammation, and is not distinctly defined, like that of an ordinary chancre. It does not terminate abruptly, but passes imperceptibly into the surrounding structure. In fact, it is merely caused by the irritation of the spreading sore; the clean edge is altogether free from it. As soon as a part cleans, the tumefaction subsides, though the

ulceration may remain long afterwards unhealed. The tumefaction cannot be said to precede the ulceration; it rather attends the sloughing, if that can be called sloughing which is in general only foul ulceration.

The phagedenic sore may destroy any part on which it is placed, but its ravages involve the cellular membrane more readily than either the prepuce or the body of the penis. The consequence is, that in most cases it burrows between the body and the skin of the penis, dissecting, in its course, the corpora cavernosa from the integuments, and creeping upwards between these parts, often as far as the os pubis. Under these circumstances, the bottom of the sore cannot be fully exposed; the part which is within view is generally clean, and sometimes slowly healing, while the portion which is concealed is foul and yellow, and secretes large quantities of a thin brownish discharge. This spreading edge is attended by the usual tumefaction, which may be felt externally as a hard ring encircling the body of the penis, marking the distance to which the sore has extended, and in the progress of the complaint approaching nearer and nearer to the root of the penis. As long as this thickened edge is to be felt, so long the sore is spreading. If the bottom of the sore cleans and tends to heal, the improvement may be known by the subsidence of this thickening, as immediately and as certainly as if the whole of the surface were exposed to view.

Under common circumstances the phagedenic sore spreads by foul ulceration, and eats its way very slowly, and almost imperceptibly. But it is subject to occasional accesses of sloughing, in which large portions of the prepuce, the glans, or the corpus spongiosum, mortify and separate. There are few cases of long standing in which such sloughing has not occurred; and in most instances, a portion of the urethra has been destroyed by it, and an opening has been formed, at which the urine escapes, about an inch above the natural meatus. The suddenness of these attacks, and the irremediable destruction which they occasion, render it necessary that the treatment should always be conducted with a view to their occurrence.

The discharge from the phagedenic sore is profuse and unhealthy; but it does not seem, like the discharge of the common chancre, to affect the surfaces with which it comes into contact. It is common that the prepuce and the glans should be almost constantly bathed in it; yet it is very rarely or never that other sores arise on these parts in consequence. Again, the contiguous surfaces are not affected. The sore may be situated on the body of the penis, while the prepuce in contact with it shall remain free from ulceration. It is not uncommon that the phagedenic sore should be situated on one side of the meatus urinæ, and should destroy a considerable portion of the glans before it is arrested; yet the affection will not extend to the other side of the meatus, although the ulcerated surface is allowed to remain perpetually in contact with it.

The phagedenic sore is attended with some, but not with acute inflammation. The pain, except during an attack of sloughing, is not very severe. The prepuce is usually red, sometimes purple, almost

always loaded with serum, and tumid; but it is not generally indurated, or firm to the touch; nor is the color of that bright scarlet which attends acute phimosis from common chancre. There is more constitutional disturbance; the pulse is generally quick and excitable, the skin hot, the appetite indifferent, and the sleep restless and disturbed.

It is rare that a suppurating bubo should arise from a phagedenic sore. A gland in the groin sometimes enlarges, but it is seldom very painful, and generally subsides spontaneously in less than a week.

The secondary symptoms which follow the phagedenic sore are peculiarly severe and intractable. They commonly consist of rupia, sloughing of the throat, ulceration of the nose, severe and obstinate muscular pains, and afterwards inflammation of the periosteum and bones. Similar complaints will follow the ordinary chancre; but when they follow a phagedenic sore they are very difficult to be cured; and it is not uncommon that the constitution of the patient should at length give way under them, and that the case should terminate fatally.

If the description of these sores is compared with that of a common chancre, which has been given in a former chapter, the distinction is sufficiently evident. The common chancre is preceded and followed by induration of a peculiar character, which holds its course in some measure independently of the ulceration itself. No such induration is found in the phagedenic sore; the thickening which does occur does not differ from that which is met with in other sores, and is merely an attendant on the unhealthy state of the ulcer. The common chancre spreads equally in all directions. The phagedenic sore spreads irregularly, and frequently heals at one edge while it is spreading at another. The common chancre tends to multiply and to produce similar ulcers on the surfaces which are in contact with it. The phagedenic sore remains single, and the contiguous surfaces are unaffected. There is also a difference, though less clearly defined, in the secondary symptoms which follow these two species of sore, and a different treatment must be adopted in the cure.

If the phagedenic sore is treated with a full course of mercury, it is most frequently found that the improvement in the first instance is more immediate and more decided than in the case of a common chancre. In a very few days, the inflammation subsides, the surface cleans, and the sore begins to heal. But this amendment is usually only temporary; it generally happens that, in a few days more, if the mercury is continued, and especially if the effect on the system is at all excessive, the aspect changes, the color of the surrounding parts becomes dark and purple, sudden sloughing comes on, and the whole surface of the sore, and often much of the prepuce and of the penis is involved in it. On the other hand, if mercury is entirely avoided, and such treatment only is adopted as would be employed in a common sore, the ulcer obstinately retains its unhealthy character, and makes constant, though less rapid, progress by foul ulceration.

Mercury is of great service in the treatment of the phagedenic sore, but if its depressing effects are allowed to come on, the consequence is, almost always, sloughing. It must, therefore, be so employed as to avoid these effects; it must be administered in those doses and in those

forms which least depress the circulation; and it must be combined with such medicines as are calculated at the same time to support the system. The oxymuriate of mercury, given in the dose of an eighth of a grain twice in the day, and in unison with decoction of sarsaparilla, is the safest and most efficient preparation. But even in this form, the effect must be watched; and if the integuments in the neighborhood of the sore should become pale or livid, or if much general languor is induced, the remedy must be intermitted and resumed only after these symptoms of impeding sloughing have disappeared.

It must not be omitted, that the internal use of the hydriodate of potash has often great effect on this form of disease.—G. G. B.]

[RICORD.—I cannot allow Mr. Babington's note to pass, without pointing out some assertions in it which are entirely incorrect.

Secondary symptoms are never observed after chancres which are phagedenic immediately on their first appearance.

Experience has taught me, that in those cases where constitutional symptoms are observed to follow phagedenic chancres, the phagedena is preceded by induration.

These apparent exceptions which phagedenic chancres present, are rarer when the phagedena is gangrenous from the first; for gangrene rapidly destroys the specific property of the ulcers and the tissues they rest upon, and thus prevents infection.

My experiments have also proved that a phagedenic chancre has nothing peculiar in its first appearance; inoculation giving at first the same results in all varieties of chancre.

Pus from a diphtheritic, phagedenic, or serpiginous chancre inoculates the neighboring parts just as well as pus from an indurated chancre; nay, more, it continues inoculable a longer time; it is not so with pus from a true gangrenous phagedenic chancre.

Buboes are far from being rare after diphtheritic phagedenic chancres; nothing, on the contrary, is more common than to see them themselves assume the phagedenic form, before or after the disappearance of the preceding ulcers. But it is true that buboes are rare after gangrenous phagedenic chancres, and that not unfrequently, when they had already begun to be developed, they disappear on the appearance of gangrene in the ulcer.

When secondary symptoms follow chancres which have become phagedenic, their gravity is not dependent on the gravity of the primary ulcer, but on the cause which rendered the ulcer grave; and this cause is found in the individual condition of the patient.

When we remember the principal varieties and the infinite shades of difference which chancres may present, we feel of how little value the absolute differential diagnosis is which Mr. Babington would establish; it is only applicable, and that very imperfectly, to ill-defined phagedenic chancres.

In phagedenic chancres, mercury is frequently more injurious than beneficial. Given in insignificant doses, its effects are illusive. Cases of its success are exceptional. But there is no remedy which can be said to be universally beneficial or injurious in phagedenic chancres. Up to the present time, no one method has been found for their treat-

ment. The main thing is to discover the cause which gives the syphilitic ulcer its unfavorable form; and this cause, which so often depends on a scrofulous diathesis, contra-indicates the use of mercury, which is a powerful remedy when the syphilitic ulcer alone remains to be treated.

I will also observe, that corroding or cancrroid ulcers, as some of Hunter's remarks have already indicated, may be mistaken for phagedenic chancres. These ulcers sometimes succeed syphilitic ulcers or occur after suspicious antecedents, and are from the first foreign to syphilis; or become so at a later period. See additions to pages 291 and 323, and an excellent treatise by Dr. Huguier, *Sur l'esthiomène de la vulve*.—RICORD.]¹

§ 2. *Of Ulceration resembling Chancres.*

It often happens that after chancres are healed, and all the virus gone, the cicatrices ulcerate again, and break out in the form of chancres.

Although this is most common in the seat of the former chancres, yet it is not always confined to them, for sores often break out on other parts of the prepuce; but still they appear to be a consequence of a venereal complaint having been there, as they seldom attack those who never had gonorrhœa or chancres. They often have so much the appearance of chancres, that I am persuaded many are treated as venereal that are really not such; they differ from a chancre in general by not spreading so fast, nor so far; they are not so painful, nor so much inflamed, and have not those hard bases that the venereal sores have, nor do they produce buboes. Yet a malignant kind of them, when they attack a bad constitution, may be taken for a mild kind of chancre, or a chancre in a good constitution.²

Some stress is to be laid upon the account that the patient gives of himself; but when there is any doubt, a little time will clear it up. I have seen the same appearances after a gonorrhœa, but that more rarely happens. It would appear that the venereal poison could leave a disposition for ulceration of a different kind from what is peculiar to itself. I knew one case where they broke out regularly every two months, exactly to a day.

As they are not venereal, their treatment becomes difficult; for the cure consists more in preventing a return than in the healing up of the present sores.

They require particular attention; for although they are not dangerous, they are often troublesome, keeping the mind in suspense for months.

I have tried a great variety of means, but with little success; yet they have in general got well in the end. In the following case, the lixivium saponarium produced a speedy cure:—

A gentleman had three sores break out on the prepuce, which had

¹ Memoirs of the National Academy of Medicine, Paris, 1849, vol. xiv. p. 501.

² Added: "I have seen several that have puzzled me extremely."—HOME.

very much the appearance of mild chancres. As I was doubtful of their nature, I waited some time, and only ordered them to be kept clean. As they did not get well, several things were tried. Mercurial dressings were applied, but they always produced considerable irritation, and it was necessary to leave them off. The mercurius calcinatus was given by way of trial, and to secure the constitution, but the sores continued the same. They were eat down with the lunar caustic, which appeared to have a better effect than any other thing tried; but still they were not healed at the end of five months. I ordered forty drops of the lixivium saponarium to be taken every evening and morning in a basin of broth. After using it three days he observed a considerable alteration in the sores, and in six days they were perfectly skinned over. He had formerly had such sores often, which had always been treated as venereal; but he began to doubt whether they were really so, from their getting so soon well in the present instance by the lixivium.

I knew a gentleman who had these sores breaking out and healing again for years. By bathing in the sea for a month or two, they healed up, and never afterwards appeared.

[RICORD.—Besides ulceration of a different nature, such as herpes and eczema, which may occur in patients who have, or have had, primary syphilitic symptoms, the genital organs, like other parts of the body, sometimes become the seat of *secondary* symptoms, which puzzle the diagnosis of persons who are little versed in the order of succession of syphilitic phenomena, because they confound them with *primary* symptoms, as Wallace appears to have done frequently.]

§ 3. *Of a Thickening and Hardening of the Parts.*

In some cases the parts do not ulcerate, but appear to thicken and become hard or firm; both the glans and prepuce seem to swell, forming a tumor or excrescence from the end of the penis, in form a good deal like a cauliflower, and, when cut into, showing radii running from its base or origin towards the external surface, becoming extremely indolent in all its operations. This gives more the idea of a cancer than the first, being principally a new-formed substance. However, it is not always a consequence of the venereal disease, for I have known it to arise spontaneously.

This disease appears to be a tumor of so indolent a kind that I do not know any medicine that stands the least chance of performing a cure. I have amputated them, and have also seen the same thing done by others, from the idea of their being cancerous, and the remaining part of the penis has healed kindly.

In most of these cases a considerable part of the penis must be removed. Immediately after the amputation, a suitable catheter should be introduced into the urethra; for if no such precaution is made use of, the consequences must be troublesome; for the first dressings become cemented to the orifice by the extravasated blood, and prevents the patient's making water, which must be attended with obvious in-

conveniences. This was the case with a patient whose penis I amputated.

[RICORD.—A chancre may leave behind it œdema, which is often hard like scirrhus; engorgement of the neighboring lymphatic vessels to a greater or less extent, presenting canals which often become fistulous; or it may leave inodular tissue, and especially specific induration. But a chancre sometimes assumes a fungous form, and passes into a mucous tubercle with various degrees of hypertrophy. These tubercles, from ignorance or inattention, may be mistaken for true vegetations; or, what is worse, for cancer. In consequence of such mistakes, I have seen organs amputated which might have been saved, if they had been more carefully examined.]

§ 4. *Of Warts.*

Another disposition which these parts acquire from the venereal poison is the disposition to form excrescences or cutaneous tumors, called warts. This disposition is strongest where the chancres were, and indeed chancres often heal into warts; but, perhaps, the parts acquire this disposition from the venereal matter having been long in contact with their surfaces, for it often happens after gonorrhœa, where there had been no chancres; and, probably, it is only in those cases where the venereal matter had produced the venereal stimulus upon the glans and prepuce, forming there what may be called an insensible gonorrhœa.

A wart appears to be an excrescence from the cutis, or a tumor formed upon it, by which means it becomes covered with a cuticle, which, like all other cuticles, is either strong and hard, or thin and soft, just as the cuticle is which covers the parts from whence they arise. They are radiated from their basis to the circumference, the radii appearing at the surface pointed or granulated, much like granulations that are healthy, except that they are harder and rise above the surface. It would appear that the surface on which each is formed has only the disposition to form, and because the surrounding and connecting surface does not go into the like substance; thus, a wart once begun does not increase in its basis, but rises higher and higher. They have an increasing power within themselves; for, after rising above the surface of the skin, on which they are not allowed to increase in breadth at the basis, they swell out into a round thick substance, which becomes rougher and rougher.

This structure often makes them liable to be hurt by bodies rubbing against them; and often from such a cause they bleed very profusely, and are very painful.

These excrescences are considered by many not as simply a consequence of the venereal poison, but as possessed of its specific disposition, and therefore they have recourse to mercury for the cure of them; and it is asserted that such treatment often removes them. Such an effect of mercury I have never seen, although given in such a quantity as to cure in the same person recent chancres and sometimes a pox.

As these substances are excrescences from the body, they are not to

be considered as truly a part of the animal, not being endowed with the common or natural animal powers, by which means the cure becomes easier. They are so little of the true animal, and so much of a disease, that many trifling circumstances make them decay; an inflammation in the natural and sound parts round the wart will give it a disposition to decay; many stimuli applied to the surface will often make them die. Electricity will produce action in them which they are not able to support; an inflammation is excited round them, and they drop off.

From this view of them, the knife and escharotics must appear not always necessary, although these modes will act more quickly than any other in many cases, especially if the neck is small. In such-formed warts perhaps a pair of scissors is the best instrument; but where cutting instruments of any kind are horrible to the patient, a silk thread tied around their neck will do very well; but, in whichever way it is separated, it will be in general necessary to touch the base with caustic.

Escharotics act upon warts in two different ways; namely, by deadening a part and stimulating the remainder; so that by the application of escharotic after escharotic the whole decays tolerably fast, and it is seldom necessary to eat them down to the very root, as the basis or root often separates and is thrown off. This, however, is not always the case, for we find that the root does not always separate, and that it will grow again; therefore, in such cases, it is necessary to eat down lower than the general surface to remove the root.

Any of the caustics, such as the lapis septicus, as also the metallic salts, such as the lunar caustic, blue vitriol, &c., have this power. The rust of copper and savine leaves mixed are one of the best stimulants.

After they have been to appearance sufficiently destroyed, they often arise anew, not from any part being left, but from the surface of the cutis having the same disposition as before. This requires a repetition of the same practice, so as to take off that surface of the cutis.

[RICORD.—Hunter's short section on warts is far from giving a true idea of all the varieties of vegetations which have been justly or unjustly ascribed to syphilis.

Frequently, these growths are mere ordinary warts, due to disease of the cutaneous or mucous follicles, and preceded by little sebaceous tumors. In this case, the secretion, furnished by the affected follicles, becomes more and more concrete, and the follicles themselves finally undergo a kind of eversion, and present a granulated floor, from which asperities spring up that give them some resemblance to *poireaux*.¹ But more commonly venereal vegetations, so called, consist of an epi-

¹ *Poireau* originally signifies a *leek*. The name is also applied to one of the varieties of warts which the French admit, from its resemblance to this vegetable, viz. : to those warts which are pediculated, and consist of a small trunk, springing from the surface of the skin or mucous membrane, and giving off minute secondary branches, which are swollen at their extremities, forming a little furrowed head. If several heads spring from the same trunk, it is called a *chou-fleur*. Again, the sessile variety, without a pedicle, extending its flat and cleft surface over the skin, receives the name of *verruë*. The sessile vegetations are usually the palest; the others are variously colored.—Ed.

genic tissue of new formation, which generally tends to increase.¹ These vegetations possess various degrees of vascularity, and, in some cases, considerable sensibility; they are sometimes sessile and sometimes pediculated. In the first case, they vary in number and size, and present a granulated, plane or convex surface, more or less red; the appearance of which reminds one of strawberries, or rather of raspberries, to which they are often compared. When they are pediculated, we find a single trunk, varying in diameter, from which branches radiate in all directions. When, from their situation, they are not cramped in their development, they resemble tolerably well a cauliflower; but when compressed or flattened, they may assume the form of a cock's crest; moist, friable, easily excited to bleed, and often bathed with a muco-purulent secretion, when they are situated on a protected mucous membrane; they become dry, hard, and even horny, on the parts of the skin exposed to the air.

Moreover, to whatever variety they belong, these vegetations do not always spring up under the same circumstances; and very frequently their cause escapes us. In some cases, they succeed eczematous or herpetic irritation. Pregnancy in females, and want of cleanliness in both sexes, may give rise to them. The different varieties of gonorrhoea sometimes seem to be the exciting cause which produces them: whilst, in other cases, they are a consequence of chancres which have followed an abnormal process in healing, or are the product of mucous tubercles.

Vegetations may be situated on the mucous membrane of the glans or prepuce, and are common in the neighborhood of the frænum and in the groove at the base of the glans; also at the entrance of the vulva, on the anfractuosities of the carunculæ myrtiformes, which are often mistaken for them; in different parts of the vaginal canal; on the os tinæ, and in the cavities of the uterus; in the urethra and the inferior portion of the rectum in both sexes; on the tongue, especially at its base, where the fungiform papillæ sometimes resemble them; on the velum palati, and particularly on the edges of the uvula; in the larynx, where my learned fellow-student, M. Senn, of Geneva, has well described them; and, finally, on different parts of the skin, and especially in the neighborhood of the genital organs and the anus.

As to the special cause which excites and keeps up these vegetations, it cannot be sought for in the virus of syphilis, after what I have said elsewhere. Their distinction into primary and secondary is without

¹ M. Lebert, in his *Physiologie Pathologique*, thus describes the microscopical structure of these vegetations:—

“A feeble power shows their internal vascular structure and numerous sebaceous follicles about their base. With a high power, the papillæ appear to be composed of an outer rind, consisting of concentric layers and of an internal substance; the two differ from each other only in density; for, besides their vascular element, they consist only of simple epidermic cells. In the outer layers, these cells are more densely packed, and present a longer and narrower outline, which, at first sight, gives them a fibrous appearance. The internal portion is also composed of epidermic cells in close juxtaposition, but round and finely dotted on their surface.

“They are nothing else than a development of the papillæ of the epidermis, and, in their anatomical composition, do not differ much from certain papilliform warts.”—Ed.

value; for they are always materially the same, and cannot in any case serve to distinguish a local infection from constitutional syphilis. The assertion that they are contagious, advanced by some persons, is false. Individuals may be found, who, having had connection with persons affected with vegetations, have afterwards had them themselves, without, however, having caught them. In such cases, which are very rare, it is certainly only a simple coincidence, and not an instance of contagion; similar examples are met with even more frequently in cases of phthisis and cancer.

Vegetations are not a proof of recent infection, nor of contamination of the system.

When they are preceded by primary or constitutional syphilis, they appear to be an accidental consequence of the local irritation which these affections may produce, but not a specific effect, since other causes may give rise to them.

Vegetations may be complicated with primary or secondary venereal symptoms, situated on the same part or at a distance. The complications which may exist in the neighborhood are, gonorrhœa; chancres in their progressive or reparative stage; indurated chancres, which may also serve as their base: mucous tubercles, etc. They often excite, or, at least in many cases, keep up gonorrhoid discharges, interfere with certain functions, or give rise to more or less serious symptoms, according to their situation.

Their diagnosis is generally easy, and a surgeon must be very inattentive to confound them with the normal tissues of certain regions, or, by a more common mistake, with tumors dependent on hypertrophy of the tissues without any epigenic growth, as occurs in some cases of mucous tubercles. When they are developed to an enormous size and confined within a narrow prepuce, the glans is often compressed and atrophied, or adhesions take place between it and the prepuce. Then, they become indurated in one part and softened in another, and their circulation being obstructed, they are attacked by gangrene, and discharge a fetid and ichorous pus, when they may be mistaken for cancerous degenerations. This mistake is more readily made in some cases, where, independently of the disfiguration of the parts from their great development and abundant suppuration, they give rise to a pallor of the surface which often resembles the straw-colored complexion of a cancerous cachexia.

With regard to the prognosis of vegetations, though it may be serious, it is never so except in consequence of the accessory circumstances.

As to their treatment, I am entirely of Hunter's opinion. General treatment with gold, mercury, sudorifics, etc., has no effect upon them. They frequently continue to increase during treatment, and disappear or fall off when nothing more is done for them, without our always being able to discover the cause of their persistence or disappearance.

When they have been apparently cured by mercurials or other constitutional remedies, it was because they consisted only of mucous tubercles or indurated chancres, which served as a base to the vegetations. We are no longer at the age, when Fabre and some other syphilographers, believers in gold and mercury, after they had administered

constitutional treatment, said the virus was destroyed, although the vegetations remained or had even increased. At the present day, the rational course to take consists in treating the complications, *when such really exist*, and in making local applications to the vegetations as to a local disease. It must be confessed, that science has added little to the local remedies since the time of Hunter, unless it be the acid nitrate of mercury as a powerful caustic, and a concentrated solution of opium, the effects of which are doubtful. Swediaur's powder is generally inefficacious. We should, in most cases, resort to cauterization, and especially to excision.—RICORD.]

§ 5. *Of Excoriations of the Glans and Prepuce.*

It very often happens that the surface of the glans and inside of the prepuce excoriate, becoming extremely tender, and then a matter oozes out. The prepuce in such cases often becomes a little thickened, and sometimes contracts in its orifice, both which circumstances render the inversion of it difficult and painful. Whether this complaint ever arises from a venereal cause is not certain, as it often takes place where there never has been any venereal taint.

This disease is in the cutis; and under such a disposition it has no power of forming a good cuticle. It is very similar to a gonorrhoea in this part, but it is not venereal.

Drawing the prepuce back, and steeping the parts in a solution of lead often takes off the irritation, and a sound cuticle is formed. Spirits diluted often produce the same effect; the unguentum citrinum of the Edinburgh Dispensatory, lowered by mixing with it equal parts of hog's lard, is often of singular service in such cases. But there are cases which bid defiance to all our applications, in which I have succeeded by desiring the person to leave the glans uncovered, which produced the stimulus of necessity for the formation of a natural cuticle.

PART V.

CHAPTER I.

OF BUBO.

A KNOWLEDGE of the absorbing system, as it is now established, gives us considerable information respecting many of the effects of poisons, and illustrates several symptoms of the venereal disease, in particular the formation of buboes. Prior to this knowledge we find writers at a loss how to give a true and consistent explanation of many of the symptoms of this disease. The discovery of the lymphatics being a system of absorbents has thrown more light on many diseases than the discovery of the circulation of the blood; it leads in many cases directly to the cause of the disease.

The immediate consequence of the local diseases, gonorrhœa and chancre, which is called bubo, as also the remote, or lues venerea, arise from the absorption of recent venereal matter from some surface where it has either been applied or formed. Although this must have been allowed in general ever since the knowledge of the disease and of absorption, yet a true solution of the formation of bubo could not be given till we had acquired the knowledge of the lymphatics being the only absorbents. Upon the old opinion, of absorption being performed by the veins, the lues venerea could easily have been accounted for, because it could as readily be produced by the absorbing power of the veins, if they had such, as by the lymphatics; but the difficulty was to say how the bubo was formed. There they seemed to be at a loss to account for this disease, yet they sometimes expressed themselves as if they had some idea of it, although at the same time they could have no clear notions of what they advanced; nor could they demonstrate what they said from the knowledge of the parts and their uses.

Buboes are by some imputed to the stopping of a gonorrhœa, or, as they express it, driving it to the glands of the groin, conformably to the idea they had of the cause of the swelling of the testicle. But this is not just, for we know of no such power as repulsion; and if it was driven there it could not be by stopping the formation of matter, but by increasing the absorption, of which they had no idea.

When we examine the opinion of authors concerning the formation of bubo, prior to the knowledge of the power of absorption in the

lymphatics, we shall find them making use of terms which they could not possibly understand. For instance, Heister says: "They are of two kinds, one venereal, and the other not;" but he does not say that the venereal arises only from impure coition.

Astruc says, p. 326, that some buboes arise immediately from impure coition, and these he calls essential; others from suppressed gonorrhœa, or a small discharge, or from chancres of the penis, and these he calls symptomatic: lastly, that they arise spontaneously without any immediate previous coition, and are a pathognomonic sign of a hidden pox.

In p. 327, he shows the impossibility of this last happening from what we now call or understand by a lues venerea; but in p. 328, he explains what he calls a latent lues venerea, which is a local affection, produced, as he supposes, from a lues venerea, but which most probably never yet happened; and if ever they had arisen from such a cause, even the absorption of their matter could not produce a venereal bubo, as will be explained. In short, as he understood not the true absorbing system, his ideas are become now unintelligible.¹

We find Cowper, Drake, and Boerhaave, as well as Astruc, speaking of the vitiated lymph not passing the glands, therefore inflaming them; also of the inspissated lymph passing, either by the circulation of the blood, that is, from the constitution to these glands (an opinion held by some to this day), or by a shorter course, viz., the lymphatic vessels which go to the inguinal glands. They also speak of the swelling of the inguinal glands, or venereal buboes, from the contagion being communicated by the resorbent lymphatics. Drake even speaks more pointedly; and, if we consider him no farther, he would almost make us believe that he knew that the lymphatics were the absorbents; but as he has no such ideas when treating of those vessels expressly, we are not to give him credit for it. His words are: "The venereal bubo may very likely take its rise from some parts of the contagious matter of claps sucked up by the lymphatics of the penis, and thence imported to the inguinal glands, where they deposit their liquor; and thence it well behooves the surgeon to be as early as may be in the opening of such tumors, before by the exporting vessels of that class the poison is carried farther into the blood, which very probably may be the case where such tumor ariseth immediately upon the stopping of a gonorrhœa, as does the hernia humoralis. But when the same appears some months after that was removed, we are to suppose, as in cases of other poisons laying hold of the blood, by the strength of nature it is thrown forth, either by means of the lymphatics of the bloodvessels themselves, if not spewed out of the nervous tubes, as Wharton surmised, and deposited in these emunctories."

Here he compares it to the formation of a hernia humoralis, which plainly shows that he understood neither of them.

Even so late as the year 1748, we do not find any new ideas on this subject. Freke says: "By sealing up the mouths of the glands of the

¹ The above extracts are from the English edition, published in the year 1754.

urethra, the poison is thence, by the ducts leading to the inguinal glands, conveyed to them."

In the year 1754, eight years after Dr. Hunter had publicly taught his opinion of the lymphatics being a system of absorbents, we find a treatise on this disease by Mr. Gataker, where as little new is advanced on this subject as in any of the former.

When we come so low down as the year 1770, in an abridgment of Astruc, by Dr. Chapman (2d edit.), in which he introduces his own knowledge and ideas, we find the absorbing power of the lymphatics brought in as a cause of the formation of buboes; but by this time the knowledge of the lymphatics being the system of absorbents was in this country generally diffused.

The doctrine of absorption being now perfectly understood, we have only to explain the different modes in which it may take place.

The venereal matter is taken up by the absorbents of the part in which it is placed; and although the absorption of the matter and the effects after absorption are the same, whether from the matter of the gonorrhœa or chancre, yet I shall divide the absorption into three kinds, according to the three different surfaces from which the matter may be absorbed, beginning with the least frequent.

The first and most simple is where the matter either of a gonorrhœa or chancre has only been applied to some sound surface, without having produced any local effect on the part, but has been absorbed immediately upon its application. Instances of this I have seen in men, and such are perhaps the only instances that can be depended upon; for it is uncertain in many cases whether a woman has a gonorrhœa or not. I think, however, I may venture to affirm that I have seen it in women, or at least there was every reason to believe that they had neither chancre nor gonorrhœa preceding, as there was no local appearance of it, nor did they communicate it to others who had connection with them.

It must be allowed that this mode of absorption is very rare; and if we were to examine the parts very carefully, or inquire of the patients very strictly, probably a small chancre might be discovered to have been the cause, which I have more than once seen. For, when we consider how rarely it happens from a gonorrhœa, in which the mode of absorption is similar, we can hardly suppose it probable that it should here arise from simple contact, the time of the application of the venereal matter being commonly so very short. We might, indeed, suppose the frequency to make up for the length of time, which we can hardly allow, for the same frequency should give the chance of producing it locally. Therefore very particular attention should be paid to all the circumstances attending such cases.

There is, however, no great reason why it should not happen, and the possibility of it lessens the faith that is to be put in the supposition that the disease may be years in the constitution before it appears; for whenever it does appear in a lues venerea, its date is always carried back to the last local affection, whether gonorrhœa or chancre, and the latter connections are never regarded.

The second mode of absorption of this matter is more frequent than

the former, and it is when the matter applied has produced a gonorrhoea; and it may happen while the complaint is going on, either under a cure or not. Some of the matter secreted by the inflamed surfaces having been absorbed and carried into the circulation, produces the same complaints as in the former case, by which means the person gives himself the lues venerea.

The third mode is the absorption of the matter from an ulcer, which may be either a chancre or a bubo. This mode is by much the more frequent, which, with many other proofs, would show that a sore or ulcer is the surface most favorable for absorption. Whether ulcers in every part of the body have an equal power of absorption, I have not been able to determine; but I suspect that an ulcer on the glans is not so good a surface for absorption as one on the prepuce, although I have seen both buboes and the lues venerea arise from the former, but not so often as from the latter.

To these three methods may be added a fourth—absorption from a wound, which, I have already remarked, is perhaps not so frequent as any of the former.

As the venereal poison has the power of contaminating whatever part of the body it comes in contact with, it contaminates the absorbent system, producing in it local venereal complaints. It is hardly necessary to observe, that what is now commonly understood by a bubo is a swelling taking place in the absorbing system, especially in the glands, arising from the absorption of some poison, or other irritating matter; and when such swellings take place in the groin, they are called buboes, whether from absorption or not, but are most commonly supposed to be venereal, even although there has been no visible preceding cause. This has been so much the case that all swellings in this part have been suspected to be of this nature; femoral ruptures and aneurisms of the femoral artery have been mistaken for venereal buboes.

I shall call every abscess in the absorbing system, whether in the vessels or the glands, arising in consequence of the absorption of venereal matter, a bubo.

This matter, when absorbed from either of the four different surfaces, which are common surfaces, wounds, inflamed surfaces, and ulcers, is carried along the absorbent vessels to the common circulation, and its passage often produces the specific inflammation in these vessels, the consequence of which is the formation of buboes, which are venereal abscesses, exactly similar in their nature and effects to a chancre, the only difference being in size. As the absorbents with the glands are immediately irritated by the same specific matter which has undergone no change in its passage, the consequent inflammation must therefore have the same specific quality, and the matter secreted in them be venereal.¹

As this system of vessels may be divided into two classes, the ves-

¹ I do not know how far this reasoning will hold good in all cases of poisons, for I very much suspect that the bubo, that is sometimes formed in consequence of inoculation of the smallpox, does not produce variolous matter. The natural poisons, in producing buboes, certainly do not form a poison similar to themselves.

sels themselves and their ramifications and convolutions, called the lymphatic glands, I shall follow the same division in treating of their inflammations.

Inflammation of the vessels is not nearly so frequent as that of the glands. In men, such inflammations, in consequence of chancres upon the glans or prepuce, generally appear like a cord leading along the back of the penis from the chancres. Sometimes they arise from the thickening of the prepuce in gonorrhœas, that part in such cases being generally in a state of excoriation, as was described when I treated of that form of the disease. These cords often terminate insensibly on the penis, near its root, or near the pubes; at other times they extend farther, passing to a lymphatic gland in the groin. This cord can be easily pinched up between the finger and thumb, and it often gives a thickness to the prepuce, making it so stiff at this part as to make the inversion of it difficult, if not impossible, producing a kind of phimosis.

I think I have observed this appearance to arise as frequently from the gonorrhœa, when attended with the before-mentioned inflammation and tumefaction of the prepuce, as from chancres; which, if my observation is just, is not easily accounted for. I have observed that absorption is more common to ulcers than inflamed surfaces, or at least the formation of a bubo in the gland, and its effects in the constitution are more common from an ulcer; but it may be remarked, that the inside of the prepuce, from whence this cord appears to arise, is in an excoriated state. It is possible that this effect may arise from the lymphatics sympathizing with the inflammation of the urethra, but I believe the affection is truly venereal; or it is possible that even the absorption of the coagulable lymph, which was produced from the venereal inflammation, and which is the cause of the tumefaction, may have the power of contamination, as appears to be the case in the cancer.

The thickening, or the formation of this hard cord, probably arises from the thickening of the coats of the absorbents, joined with the extravasation of coagulable lymph, thrown in upon its inner surface, as in inflamed veins.

This cord often inflames so much as to suppurate, and sometimes in more places than one; forming one, two, or three buboes, or small abscesses in the body of the penis. When this is going on, we find in some parts of this cord a circumscribed hardness; then suppuration takes place in the centre, the skin begins to inflame, the matter comes nearer to it, and the abscess opens like any other abscess.

I have seen a chain of these buboes, or little abscesses, along the upper part of the penis, through its whole length.

This may be supposed to be exactly similar to the inflammation and suppuration of a vein after being wounded and exposed.

Inflammation of the glands is much more frequent than the former, and arises from the venereal matter being carried on to the lymphatic glands, the structure of which appears to be no more than the ramifications and reunion of the absorbent vessels, by which means they form these bodies.

From this structure, we may reasonably suppose that the fluid ab-

sorbed is in some measure detained in these bodies, and thereby has a greater opportunity of communicating the disease to them than to the distinct vessels, where its course is perhaps more rapid, which may account for the glands being more frequently contaminated.

Swellings of these glands are common to other diseases, and should be carefully distinguished from those that arise from the venereal poison. The first inquiry should be into the cause, to see if there is any venereal complaint at some greater distance from the heart, as chancres on the penis, or any preceding disease on the penis; to learn if mercurial ointment has been at all applied to the legs and thighs of that side, for mercury applied to those parts, for the cure of a chancre, will sometimes tumefy the glands, which has been supposed to be venereal. We should farther observe, if there be no preceding disease in the constitution, such as a cold, fever, &c., the progress of the swelling with regard to quickness is also to be attended to, as also to distinguish it from a rupture, lumbar abscess, or aneurism of the crural artery.

Perhaps these bodies are more irritable, or more susceptible of stimuli than the vessels. They are certainly more susceptible of sympathy; however, we are not yet sufficiently acquainted with the use of these glands to be able to account satisfactorily for this difference.

It would appear in some cases that it is some time after the absorption of the venereal matter before it produces its effects upon the glands; in some it has been six days at least. This could only be known by the chancres being healed six days before the bubo began to appear; and in such cases it is more than probable that the matter had been absorbed a much longer time before, for the last matter of a chancre most probably is not venereal; and indeed it is natural to suppose that the poison may be as long before it produces an action on the parts, when applied in this way, as it is either in the urethra or in forming a chancre, which I have shown to be sometimes six or seven weeks.

The glands nearest to the seat of absorption are in general the only ones that are attacked, as those in the groin, when the matter has been taken up from the penis in men; in the groin, between the labia and thigh, and the round ligaments, when absorbed, from the vulva, in women. I think there is commonly but one gland at a time that is affected by the absorption of venereal matter, which, if so, becomes in some sort a distinguishing mark between venereal buboes and other diseases of these bodies. We never find the lymphatic vessels or glands, that are second in order, affected, as those along the iliac vessels or back; and I have also seen when the disease has been contracted by a sore, or cut upon the finger, the bubo come on a little above the bend of the arm, upon the inside of the biceps muscle; and in such where the bubo has come in that part, none has formed in the armpit, which is the most common place for the glands to be affected by absorption.

But this is not universal, although common, for I was informed by a gentleman who contracted the disease in the before-mentioned way, that he had buboes both on the inside of the biceps muscle and in the

armpit. Another case of this kind I have heard of since ; why it is not more common is perhaps not easily explained.

It might be supposed that the matter was weakened, or much diluted by the absorptions from other parts by the time it gets through these nearest ramifications, and therefore has not power to contaminate those which are beyond them ; but it is most probable that there are other reasons for this. I once suspected that the nature of the poison was altered in these glands as it passed through them, which was the reason why it did not contaminate the second or third series of glands ; and also why it did not affect the constitution in the same way as it did the parts to which it was first applied ; but this explanation will not account for the next order of glands to suppurating buboes not being affected by the absorption of venereal matter. It appears to me that the internal situation of the other glands prevents the venereal irritation from taking place in them ; and this opinion is strengthened by observing when one of these external glands suppurates and forms a bubo, which is to be considered as a large venereal sore or chancre, that the absorption from it, which must be great, does not contaminate the lymphatics or glands next in order, by the venereal matter going directly through them.

If this be true, then, the skin would seem to be the cause of the susceptibility of the absorbents to receive the irritation. Whether the skin has the power inherent in itself, or acquires it from some other circumstance, as air, cold, or sense of touch, is not easily ascertained ; but whichever it be, it shows that the venereal matter of itself is not capable of irritating, and that it requires a second principle to complete its full effect ; that is, a combination of the nature of the poison and the influence of the skin, and that influence must be by sympathy, and therefore weaker than if acting in the same part ; that is, the skin itself, which, perhaps, is the reason why the venereal matter does not always affect those vessels and glands, while it always does the skin, if inserted into it.

The situation of buboes arising from the venereal disease in the penis is, in men, in the absorbent glands of the groin ; if a gonorrhœa is the cause of a bubo, one groin is not exempted more than the other ; both may be affected ; but if a bubo arises in consequence of a chancre, then the groin may be generally determined by the seat of the chancre, for if the chancre is on one side of the penis then the bubo will commonly be on that side ; however, this is not universally the case ; for I have known instances, although but few, where a chancre on one side of the prepuce or penis has been the cause of a bubo on the opposite side, which, if arising from that chancre, is a proof that the absorbents either anastomose, or decussate each other. If the chancre be on the frænum, or on the middle of the penis, between the two sides, then it is uncertain which side will be affected.

The situation of the glands of the groin is not always the same, and therefore the course of the absorbent vessels will vary accordingly. I have seen a venereal bubo, which arose from a chancre on the penis, a considerable way down the thigh ; on the contrary, I have seen it often as high as the lower part of the belly, before Poupart's ligament,

and sometimes near the pubes, all of which three situations may lead to some variations in the method of cure; therefore it may be proper to attend to them.

As the disease most commonly arises from copulation, the situation of buboes is generally in the groin; but as no part of the body, under certain circumstances, is exempt from this disease, we find the nearest external glands between the part of absorption and the heart, everywhere in the body share the same fate with those of the groin, especially if external.

CHAPTER II.

OF BUBOES IN WOMEN.

THE same diseases in the absorbents, in consequence of the absorption of the venereal matter, take place in this sex as well as in men. I never saw but one case where the absorbent vessels were diseased; but this is nearly in the same proportion as in men, when I consider the proportion the number of the one sex bears to that of the other who apply to me for a cure of the venereal disease in any form. The case was a gonorrhœa, with violent itching and soreness when the patient sat or walked, but she had very little pain in making water. When I examined the parts I could see no difference between them and sound parts, excepting that the left labium was swelled, or fuller than the other, and a hard cord passed from the centre of that labium upwards to the os pubis, and passed on to the groin of the same side, and was lost in a gland as high as Poupart's ligament. It was not to be felt but by pressing the parts with some force, and it gave considerable pain upon pressure.

The swelling of the labium appeared to be somewhat similar to the swelling of the prepuce in similar cases in men, so that they would appear to arise from the same cause.

One would naturally suppose that what has been said of this complaint in the lymphatic glands in men, would be wholly applicable to women, and also that nothing peculiar to women could take place; but the seat of absorption is more extensive in this sex, and the course of some of the absorbents is also different, from whence there are three situations of buboes in women, two of which are totally different from those in men, and these I suspect to be in the absorbents.

The third situation of buboes in this sex is similar to that in men, and therefore they may be divided into three, as in men.

When buboes arise in women where there is no chancre, it is more difficult to know whether they are venereal or not than in men; for when they arise in men without any local complaint it is known that no such complaint exists, and therefore the bubo cannot be venereal, excepting by immediate absorption; but in women it is often difficult

to know whether there be any infection present or not; and, therefore, in order to ascertain the nature of the bubo, attention must be paid to its manner of coming on, progress, and other circumstances.

When chancres are situated forward, near to the *meatus urinarius*, *nymphæ*, *clitoris*, *labia*, or *mons Veneris*, then we find that the matter absorbed is carried along one or both of the round ligaments, and the buboes are formed in those ligaments just before they enter the abdomen, without, I believe, ever going farther. These buboes I suspect not to be glandular, but inflamed absorbents; and if so, it strengthens the idea that it is only an external part that can be affected in this way.

When the chancres are situated far back, near the perineum or in it, the matter absorbed is carried forwards along the angle between the labium and the thigh to the glands in the groin; and often in this course there are formed small buboes in the absorbents, similar to those on the penis in men; and when the effects of the poison do not rest here, it often produces a bubo in the groin, as in men.

[EDITOR.—A simple chancre *may*, an infecting chancre *must* exercise an appreciable influence upon the lymphatic ganglia in anatomical connection with it.

Whenever such influence takes place, it is a remarkable fact that it is exercised only upon the superficial ganglia, and is confined to the first group of glands in which the lymphatic vessels from the neighborhood of the chancre terminate. A specific bubo—that is, a bubo secreting inoculable pus, such as will presently be described—is never met with in the deep ganglia, nor in the lymphatics emanating from them. It would therefore appear that the first group of ganglia, in connection with a chancre, presents a barrier, which the virulent pus cannot pass. This fact has already been noticed by Hunter. An apparent exception to this law exists in cases, which are not unfrequent, of a bubo occurring on the opposite side to that on which the chancre is situated, but this is explained by the anatomy of the lymphatic vessels which are found to interlace upon the median line.

The most important point to be remembered, is the fact that each of the two varieties of chancre has its special influence on the neighboring ganglia.

A simple, non-indurated chancre does not necessarily affect the lymphatic ganglia at all; indeed, in the majority of cases, the latter remain in their normal condition. But if they be affected, the symptoms are peculiar, and entirely distinct from those of a bubo dependent upon an indurated chancre. In the former case, it is always an inflammatory bubo, painful from the outset, and progressing rapidly towards suppuration. Moreover, as a general rule, only one ganglion is affected. But here it is necessary to admit two varieties, corresponding to the two modes in which a simple chancre may affect these ganglia. These varieties are simple buboes and virulent buboes.

A simple bubo is produced, when the chancre acts like any ordinary irritant—as, for instance, a thorn implanted in the flesh—and gives rise to simple inflammation of the neighboring ganglion. We then have a simple adenitis

which is identical in its development and progress with any ordinary case of adenitis. It may terminate by resolution, or it may suppurate, but its pus is never virulent.

This is not the case with a virulent bubo, which is due to another cause than simple irritation, namely, to absorption of the specific pus of the chancre. Like the simple bubo, a virulent bubo is acute and inflammatory, but its termination is quite different. Its resolution is impossible; it always suppurates, and its pus is virulent pus, capable of being inoculated. Moreover, the wound produced by the opening of a virulent bubo, becomes inoculated by this virulent pus, and assumes the character of a specific ulceration, which it in reality is.

The following is the manner in which a bubo of this variety is produced: the virulent pus covering the surface of the chancre, penetrates the ulcerated and open mouths of the lymphatic vessels; it passes through these canals, which it generally leaves intact, probably in consequence of the rapidity with which its passage is effected; finally, it arrives within the ganglia, the function of which is to retard the course of the lymph, and elaborate its constituent parts. Here it exercises its specific action, and produces a true inoculation, which is soon followed by the formation of a chancre. A virulent bubo, therefore, is a true chancre, showing a tendency to ulceration, and secreting virulent and inoculable pus; and hence it is readily understood why it invariably suppurates.

But the order of events is not always as simple as we have described it. We have spoken of the inflammatory bubo, and the bubo by absorption, as two distinct affections, but the two frequently, and in fact, generally, are in a measure combined, though each preserves its normal characteristics. A ganglion is inoculated by absorption of the virus, and is transformed into a virulent abscess; this sets up inflammatory action in the neighboring cellular tissue which also terminates in suppuration. Hence, there are two collections of pus formed: one encysted within the ganglion; the other diffuse, and external to it. If now by a careful incision, we reach the more superficial collection of matter, and inoculate it upon the integument of the patient; and afterwards cutting deeper, take a drop of pus from within the ganglionary abscess, and inoculate it also, we shall find that the first inoculation will fail while the second will succeed.

The wound formed by the opening of a purely inflammatory bubo, is a simple wound, and rapidly cicatrizes, but that of a virulent bubo is transformed into a true chancre. In a few days it assumes all the characters of a primary ulcer; its edges are everted, its floor grayish, its suppuration specific, its pus inoculable, its tendency progressive, &c. It is liable also to all the complications of a chancre, and, among others, to phagedena, of which examples are always to be met with in our large hospitals.

To recapitulate, a simple chancre, if it affect the lymphatic ganglia at all, may produce two kinds of bubo: one simply inflammatory or sympathetic,

susceptible of resolution, or, if it suppurates, furnishing simple pus; the other, a specific or virulent bubo, necessarily suppurating, its pus inoculable, and its opening being transformed into a true chancre.

The value of these symptoms will be better appreciated after describing the kind of bubo which attends an infecting chancre. An additional point of distinction between the two is to be found in the date of their appearance. The affection of the lymphatic ganglia attendant upon an infecting chancre, generally coincides with the appearance of the induration of the chancre, while in the case of a bubo accompanying a simple chancre, there is no fixed period for its development. It may take place late, even as late as three years after the chancre is formed, as in a case observed by M. Puche.

The bubo which sometimes attends a gonorrhœa belongs to the same variety as the simple or inflammatory bubo. It can only be virulent when the discharge from the urethra depends upon, or is coexistent with a concealed chancre.

Another variety of bubo, the one which always accompanies an infecting chancre, will next engage our attention. As already stated, the time of the appearance of this kind of bubo generally coincides with the induration of the chancre, or very near it; during the course of the first or second week following coitus, and it is very rare for it to appear after this time. This bubo at first consists of a simple fulness of the ganglia, free from all inflammatory symptoms, and generally unobserved by the patient. In a few days it acquires its full development. We then find a series of small tumors, of an oval form, very hard, independent of each other and movable. They are entirely indolent, causing no pain, not tender on pressure, and exciting no inconvenience except that which may be supposed to be due to the pressure of their increased volume on the neighboring tissues.

They are very hard, and their hardness is of a peculiar kind—elastic and cartilaginous. It is in fact of the same nature and presents the same characters as the induration of the base of the chancre.

These tumors are independent of each other. They are never fused together, nor closely adherent to the surrounding cellular tissue, so that they move freely beneath the finger.

Unlike the single inflamed ganglion which accompanies a simple chancre, they are multiple. All the ganglia corresponding to the affected region are involved, and hence the name of *pleiad*, which Ricord has applied to this form of bubo. It is rare for these tumors to assume any considerable size. They seldom are larger than an almond; but among the number we generally find one which is larger than the others; and this is the one in which the lymphatics from the ulcer terminate. This ganglion is probably influenced directly by the chancre by continuity, while the neighboring ganglia are affected through sympathy and the constitutional diathesis.

Whenever an infecting chancre is situated upon one side of the median line of the penis, a pleiad of indurated ganglia will always be found on the same

side in the groin, but there generally exists another similar pleiad in the opposite groin, perhaps not so well developed, but equally characteristic.

The bubo attending an indurated chancre shows no tendency by itself to become inflamed, nor to take on specific suppuration. Through its whole course it is free from all symptoms of inflammation. It is not to be understood by this, however, that an indurated bubo is protected from the action of all causes capable of exciting simple inflammation. On the contrary, the induration of the ganglia may be said to favor such action; and hence we not unfrequently find an indurated bubo, in a strumous subject, the starting point of a scrofulous enlargement of the gland, which may terminate in suppuration. But independently of other causes an indurated bubo never suppurates, nor in any case gives exit to inoculable pus.

The symptoms of an indurated bubo, which have now been described, are so well marked that they evidently afford a most valuable aid to the diagnosis of an infecting chancre. Fortunately this bubo preserves its characteristics long after the primary sore, to which it was due, is healed. Though the induration of the chancre may, in some instances, rapidly disappear, yet the attending bubo is usually well marked for months, and sometimes for years. It may remain as the only sign to indicate the point of origin of constitutional symptoms, which have declared themselves after all traces of the primary ulcer have disappeared. Whenever therefore a patient with secondary symptoms denies the existence of any suspicious antecedent, do not fail to examine the lymphatic ganglia in the various parts of the body. The discovery of an indurated bubo will not only show that there has been an infecting chancre, but will indicate its seat.

Thus an indurated bubo situated above one of the condyles of the humerus or in the axilla will point to a chancre upon the corresponding extremity, and usually upon the finger; if situated in the submaxillary region, to a chancre on the lip; and if you find the most external of the inguinal ganglia alone involved, you have reason to suspect a chancre of the anus.

The variety of bubo just described belongs exclusively to the infecting chancre; nay more, it always attends this kind of chancre. It may vary in the degree of its development, and be more or less marked in the different periods of its existence, but it never fails to accompany an indurated primary ulcer. There can be no infecting chancre without a corresponding indurated bubo.

Some authors admit what are called non-consecutive buboes, that is, buboes which are not preceded by a chancre, and which are therefore to be considered as primary symptoms; but M. Ricord rejects this class of buboes entirely. The irritation of excessive coitus may indeed cause a swelling of the inguinal glands, but in this case it has nothing whatever to do with syphilis, and it is impossible to admit that the syphilitic virus can be absorbed and conveyed to the ganglia without giving rise to a chancre at its point of entrance.

We will add a few words on the influence which chancres exert upon the lymphatics themselves.

When pus is absorbed from a simple chancre, it usually passes through the lymphatic vessel with such rapidity as not to affect it, so that lymphangitis symptomatic of a simple chancre is rare, compared with buboes. If, however, the pus be delayed in its passage through the lymphatic, it inoculates the part, and an abscess is formed, which, when opened, constitutes a true chancre, secreting virulent pus, and identical with the chancre which follows the opening of a virulent bubo.

An indurated chancre likewise has its peculiar action on the lymphatic vessels. If these be affected, no inoculation takes place, there is no inflammation, and no suppuration. There is merely an effusion of plastic lymph. The vessel becomes tumefied and indurated, like an indurated bubo, and may be felt like a cord beneath the finger, sometimes presenting a series of swellings from point to point, like a string of beads. This indurated or plastic lymphangitis is far from always accompanying an indurated bubo; it is not, therefore, like the latter, a necessary attendant of the indurated chancre.

After what has now been said, the importance of consulting the condition of the neighboring lymphatics and their ganglia, in forming our diagnosis as to the character of a chancre, will at once be recognized. The symptoms already described of the two varieties of primary ulcers are not always clearly marked, and if we relied upon them alone, we should often be led into error; but an examination of the neighboring ganglia will supply what is here wanting, and enable us to arrive at a certain conclusion as to the nature of the primary sore. An infecting chancre, which it is so important to recognize, may always be known by the induration of its base and by its attendant indurated bubo.—EDITOR.]

CHAPTER III.

OF THE INFLAMMATION OF BUBOES AND THE MARKS THAT DISTINGUISH THEM FROM OTHER SWELLINGS OF THE GLANDS.

THE bubo commonly begins with a sense of pain, which leads the patient to examine the part, where a small hard tumor is to be felt.¹ This increases like every other inflammation that has a tendency to suppuration; and, if not prevented, goes on to suppuration and ulceration, the matter coming fast to the skin.

But we find cases where they are slow in their progress, which, I

¹ It must be remarked, here, that whenever a person has either a gonorrhœa or a chancre, he becomes apprehensive of a bubo: and as there are in the gonorrhœa, and sometimes in the chancre, sympathetic sensations in or near the groin, they are suspected by the patient to be beginning buboes, and the hand is immediately applied to the part; and if he feels one of the glands, although not in the least increased, the suspicions are confirmed, from the belief that he has no such parts naturally.

suspect, either arises from the inflammatory process being kept back by mercury or other means, or being retarded by a scrofulous tendency, such a disposition in the parts not so readily admitting the true venereal action.

At first, the inflammation is confined to the gland, which is movable in the cellular membrane; but as it increases in size, or as the inflammation, and more especially the suppuration, advances, which in all cases produce rather a common than a specific effect, the specific distance is exceeded; the surrounding cellular membrane becomes more inflamed, and the tumor is more diffused. Some buboes become erysipelatous, by which means they are rendered more diffused and œdematous, and do not readily suppurate, a circumstance often attending the erysipelatous inflammation.

To ascertain what a disease is, is the first step in the cure; and when two or more causes produce similar effects, great attention is necessary to distinguish one effect from another, so as to come at the true cause of each.

The glands of the groin, from their situation, are liable to suspicion, for, besides being subject to the common diseases, they become exposed to others, by allowing whatever is absorbed to pass through them; and as the route of the venereal poison to the constitution is principally through them, and being oftener ill from this cause than any other, they often are suspected of this disease without foundation.

To distinguish with certainty the true venereal bubo from swellings of those glands arising from other causes, may be very difficult. We must, however, examine all circumstances, to ascertain in what the bubo differs from the common diseases of those glands, whether in the groin or elsewhere, in which examination the apparent causes are not to be neglected. I have already given the character of the venereal bubo in general terms; but I shall now be more particular, as the two are to be contrasted.

The true venereal bubo, in consequence of chancre, is most commonly confined to one gland. It keeps nearly its specific distance till suppuration has taken place, and then becomes more diffused.¹ It is rapid in its progress from inflammation to suppuration and ulceration. The suppuration is commonly large for the size of the gland, and but one abscess. The pain is, very acute. The color of the skin which the inflammation attacks is a florid red.

It may be observed that the buboes, in consequence of the first mode of absorption, viz., where no local disease has been produced, will always be attended with a greater uncertainty of the nature of the disease than those attended or preceded by a disease in the penis, because a simple inflammation and suppuration of these glands are not sufficient to mark it to be venereal; but as we always have this disease in view when the glands of the groin are the seat of the disease, the patient runs but little risk of not being cured, if it should be vene-

¹ It may be observed here, that the glands and surrounding parts being dissimilar, inflammation does not so readily become diffused as when it takes place in a common part.

real; but I am afraid that patients have often undergone a mercurial course when there has been no occasion for it.

It will, perhaps, be difficult to find out the specific difference in the diseases themselves; but I think that such buboes as arise without any visible cause are of two kinds; one similar to those arising from chancres or gonorrhœa; that is, inflaming and suppurating briskly. These I have always suspected to be venereal; for although there is no proof of their being so, yet from these circumstances there is a strong presumption that they are.

The second are generally preceded and attended with slight fever, or the common symptoms of a cold, and they are generally indolent and slow in their progress. If they are more quick than ordinary, they become more diffused than the venereal, and may not be confined to one gland. When very slow they give but little sensation, but when more quick, the sensation is more acute, though not so sharp as in those that are venereal; and most commonly they do not suppurate, but often become stationary. When they do suppurate it is slowly, and often in more glands than one, the inflammation being more diffused, and commonly small in proportion to the swelling. The matter comes slowly to the skin not attended with much pain, and the color is different from that of the other, being more of the purple. Sometimes the suppurations are very considerable, but not painful.

Now let us see what other causes there are for the swelling of these glands besides venereal infection, to which I have ascribed one of the modes of swelling; for there must be other causes to account for the other modes of it.

The first thing to be attended to is, whether or not there are any venereal complaints; and if not, this becomes a strong presumptive proof that they may not be venereal, but proceed from some unknown cause. If the swelling is only in one gland, very slow in its progress, and gives but little or no pain, it is probably merely scrofulous; but if the swelling is considerable, diffused, and attended with some inflammation and pain, then it is most probable that there is a constitutional action consisting in slight fever, the symptoms of which are lassitude, loss of appetite, want of sleep, small quick pulse, and an appearance of approaching hectic. Such swellings are slow in their cure, and do not seem to be affected by mercury, even when very early applied.

A gentleman had all the symptoms of a slight fever; the pulse a little quick and hard, loss of appetite, and of course loss of flesh; a listlessness, and a sallow look. While he was in this state a swelling took place in the glands of one of the groins. He immediately sent for me, because he imagined it to be venereal. From the history of the case, I gave it as my firm opinion it was not; in this, he had not much faith. The swellings were not very painful, and, after having acquired a considerable size, they became stationary. To please him, I gave him a box of mercurial ointment, to be rubbed on the leg and thigh only of the side affected, that it might have a sufficient local effect, and as little go into the constitution as possible; but it did not

appear to be of any service to the swellings in the groin, they remaining stationary, and almost without pain. His friends became uneasy, and sent their surgeons to him, who, without knowing he was my patient, and of course without knowing my opinion, imagined that the disease was venereal, and talked of giving mercury. With respect to the cure, I thought he should go to the sea and bathe.

Allowing the chance of the disease being venereal or not venereal to be equal, I reasoned upon that ground. His present want of health could not be supposed to arise from any venereal cause, as it was prior to the swelling in the groin; and therefore, though the swelling might be venereal, he was not at present in a condition to take mercury, as a sufficient quantity of that medicine for the cure might kill him; and if it should not be venereal, that a still greater quantity of mercury must be given than what was necessary if it were venereal; because its not giving way readily would naturally make the surgeon push the mercury farther; and, besides this disagreeable circumstance, the disease in the groin might be rendered more difficult of cure. But by going to the sea his constitution would be restored; and if the disease in the groin proved to be venereal, he would be in a proper condition to go through a mercurial course, and by that means get rid of both diseases by the two methods. But if I should be right in my opinion that there was nothing venereal in the case, then he would probably get well by the sea bathing.

These arguments had the desired effect; he went directly to the sea, and began to recover almost immediately. About a fortnight after, a small suppuration took place in one of the glands. I directed that a poultice should be made with sea water and applied; and, in case of the breaking of the abscess, that it should not be farther opened, but poulticed till healed. In six weeks he came back perfectly recovered in every respect.

The above-mentioned appearance, with the constitutional affections, I have seen take place when there were chancres, and I have been puzzled to determine whether it was sympathetic from a derangement of the constitution, or from the absorption of matter.

I have long suspected a mixed case, and I am now certain that such exists. I have seen cases where the venereal matter, like a cold or fever, has only irritated the glands to disease, producing in them scrofula, to which they were predisposed.

In such cases the swellings commonly arise slowly, give but little pain, and seem to be rather hastened in their progress if mercury is given to destroy the venereal disposition. Some come to suppuration while under this resolving course, and others, which probably had a venereal taint at first, become so indolent that mercury has no effect upon them, and in the end get well either of themselves or by other means, which, I imagine, may have induced some to think that buboes are never venereal. Such cases require great attention, that we may be able to determine them properly; and I believe this requires in many cases so nice a judgment that we shall be often liable to mistakes.

Buboes are undoubtedly local complaints, as has been explained.

How far the lymphatic glands are to be considered as guards against the farther progress of this or any other disease caught by absorption, is not easily determined. We must, however, allow that they cannot prevent the poison from entering the constitution in cases where it produces buboes, for whenever it affects these glands in its course it produces the same disease in them which is capable of furnishing the constitution with an increased quantity of the same kind of poison.

CHAPTER IV.

GENERAL REFLECTIONS ON THE CURE OF BUBOES.

FROM what has been offered on the history of buboes, it will be needless here to enter into a discussion of the opinion of their being a deposit from the constitution, and of the conclusion drawn from this opinion, that they ought not to be dispersed; for according to this theory, to disperse them would be to throw the venereal matter upon the constitution. But if this were really the case, then there would be no occasion for the use of mercury, provided that the bubo be allowed to proceed, as it would prove its own cure; but even those who were of this opinion were not satisfied with the cure which they supposed nature had pointed out, but gave mercury, and in very large quantities. From the same history of a bubo, I have also endeavored to show that there are several buboes which are not in the least venereal, but scrofulous; and that there are also buboes which appear to be only in part venereal, or perhaps only a gland disposed to scrofula, brought into action by the venereal irritation, similar to what happens often from the matter of the smallpox in inoculation. Therefore, prior to the speaking of the method of cure, the true venereal bubo is to be distinguished from others, if possible. When it is well ascertained to be venereal, resolution is certainly to be attempted, if the bubo be in a state of inflammation only. The propriety of the attempt depends upon the progress which the disease has made. If it be very large, and suppuration appears to be near at hand, it is probable that resolution cannot be effected; and if suppuration has taken place I should very much doubt the probability of success, and an attempt might now possibly only retard the suppuration and protract the cure.

The resolution of these inflammations depends principally upon mercury, and almost absolutely upon the quantity that can be made to pass through them; and the cure of them, if allowed to come to suppuration, depends upon the same circumstances. The quantity of mercury that can be made to pass through a bubo depends principally upon the quantity of external surface for absorption beyond the bubo.

Mercury is to be applied in the most advantageous manner; that is, to those surfaces by an absorption from which it may pass through the

diseased gland; for, the disease there being destroyed, the constitution has less chance of being contaminated. The powers of mercury may often be increased from the manner in which it is applied. In the cure of buboes, it should always be made to pass into the constitution by the same way through which the habit received the poison; and, therefore, to effect this it must be applied to the mouths of those lymphatics which pass through the diseased part, and which will always be placed on a surface beyond the disease.

But the situation of many buboes is such as not to have much surface beyond them, and thereby not to allow of a sufficient quantity of mercury being taken in in this way; as, for instance, those buboes on the body of the penis arising from chancres on the glans or prepuce.

These two surfaces are not sufficient to take in the necessary quantity to cure those buboes in its passage through them; therefore, whenever the first symptoms of a bubo appear, its situation is well to be considered, with a view to determine if there be a sufficient surface to effect a cure, without our having recourse to other means. It is first to be observed whether the absorbent vessels on the body of the penis are affected, or the glands in the groin. If the disease be in the groin, it must be observed in which of the three situations of the bubo, before taken notice of, it is; whether on the upper part of the thigh and groin, on the lower part of the belly before Poupart's ligament, or near to the pubes. If they are on the body of the penis, this shows that the absorbents leading directly from the surface of absorption are themselves diseased. If in the groin, and on the upper part of the thigh, or perhaps a little lower down than what is commonly called the groin, then we may suppose it is in the glands common to the penis and thigh. If high up, or on the lower part of the belly, before Poupart's ligament, then it is to be supposed that these absorbents that arise from about the groin, lower part of the belly, and pubes, pass through the bubo; and, if far forwards, then it is most probable that only the absorbents of the penis and skin about the pubes pass that way. The knowledge of these situations is very necessary for the application of mercury for the cure by resolution, and for the cure after suppuration has taken place.

The propriety of this practice must appear at once when we consider that the medicine cannot pass to the common circulation without going through the diseased parts: and it must promote the cure in its passage through them; while at the same time it prevents the matter which has already passed, and is still continuing to pass, into the constitution from acting there, so that the bubo is cured and the constitution preserved.

But this practice alone is not always sufficient; there are many cases in which mercury by itself cannot cure. Mercury can only cure the specific disposition of the inflammation; and we know that this disease is often attended with other kinds of inflammation besides the venereal.

Sometimes the common inflammation is carried to a great height; at other times the inflammation is erysipelatous, and, I suspect, often scrofulous. We must, therefore, have recourse to other methods.

Where the inflammation rises very high, bleeding, purging, and fomenting are generally recommended. These will certainly lessen the active power of the vessels, and render the inflammation more languid; but they can never lessen the specific effects of this poison, which were the first cause, and are still in some degree the support of the inflammation. Their effects are only secondary, and if they reduce the inflammation within the bounds of the specific, it is all the service they can perform. If the inflammation be of the erysipelatous kind, perhaps bark is the best medicine that can be given; or if it be suspected to be scrofulous, hemlock and poultices made with sea-water may be of service.

Vomits have been of service in resolving buboes, even after matter has been formed in them, and after they have been nearly ready to burst; this acts upon the principle of one irritation destroying another; and sickness and the act of vomiting, perhaps, give a disposition for absorption. A remarkable instance of this kind happened in an officer who had a bubo at Lisbon. It came to fair suppuration, and was almost ready to burst. The skin was thin and inflamed, and a plain fluctuation felt. I intended to open it, but as he was going on board a ship for England on the day following, I thought it better to defer it. When he went on board, he set sail immediately, and the wind blew so very hard that nothing could be done for some days, all which time he was very sick, and vomited a good deal; when the sickness went off, he found the bubo had disappeared, and it never afterwards appeared. When he came to England, he went through a regular course of mercury.

§ 1. *Of Resolution of the Inflammation of the Absorbents on the Penis.*

The surface beyond the seat of the disease in this case, that is, all that part of the penis before the bubo, is not large enough to take in a quantity of mercury sufficient to prevent the effects of absorption, and therefore recourse is to be had to other means; yet this application should by no means be neglected, and this surface, small as it is, should be constantly covered with mercurial ointment, which will assist in the cure of the local disease. It may be disputed whether any medicine can pass through diseased lymphatics, so as to have any effect upon them, but I judge from experience that it certainly can. As this surface is too small, and as it is necessary that a larger quantity should be taken in, it becomes proper to give it either by the mouth, or by friction on some larger surface; this is necessary to prevent the lues venerea, as well as to cure the parts themselves. The quantity cannot be determined; that must be left to the surgeon, who must be directed by the appearances of the original complaint, and the readiness with which the disease gives way.

The same method is to be followed in women; but as there is a larger surface in this sex, more mercury may possibly be absorbed; and there should be a constant application of ointment to the inside and outside of the labia.

§ 2. *Of the Resolution of Buboes in the Groin.*

The inflammation of the glands is to be treated exactly upon the same principle with the other; but we have in general a larger surface of absorption, so that we can make a greater quantity of mercury pass through the diseased parts.

It will be proper to apply the mercury according to the situation of the inflamed gland. If the bubo be in the groin, according to our first situation, then it is necessary to rub the mercurial ointment upon the thigh. This surface will in general absorb as much mercury as will be sufficient to resolve the bubo, and to preserve the constitution from being contaminated by the poison that may get into it; but if resolution does not readily take place, then we may increase the surface of friction by rubbing the ointment upon the leg.

But if the bubo be on the lower part of the belly, that is, in the second situation, then the ointment should be rubbed also upon the penis, scrotum, and belly; and the same if the bubo should be still forwards; for probably those glands receive the lymphatics from all the surfaces mentioned, as well as from the thigh and leg.

The length of time for continuing the frictions must be determined by circumstances. If the bubo gives way, they must be continued till it has entirely subsided, and perhaps longer, on account of the cause of it, a chancre, which may not yield so soon as the bubo. If it still goes on to suppuration, the frictions may or may not be continued, for I do not know for certain if anything is to be gained by their continuance in this state.

The quantity here recommended may affect the mouth; and this effect must also be regulated according to circumstances.

§ 3. *Of the Resolution of Buboes in Women.*

When treating on the seat of buboes in women, I observed that two situations were peculiar to them, the others similar to those in men.

In the first and second situations, especially the first, the surface of absorption beyond the bubo is by much too small to be depended upon for receiving a sufficient quantity of mercury to produce resolution; but in the second, that is, between the labia and thigh, the mercury may be rubbed in all about the anus and buttock, as all the absorbents of those parts probably pass that way; we know, at least, that they do not pass into the pelvis by the anus, but go by the groin. Other means of introducing mercury must be recurred to, as is recommended in the case of men; but still, it will be proper to rub in on those surfaces as much as possible.

In the situations common to both sexes, we have a larger field; yet as they are divisible into three, the same observations hold good, and a similar mode of practice is to be followed in women as in men.

§ 4. *Of Buboes in other Parts.*

As venereal buboes arise from other modes of application of the poison besides coition, they are to be found in different parts of the body, but more frequently in the hands. They arise in the armpit, from wounds in the hands or fingers being contaminated by venereal matter, and reduced to a chancre. In such cases, it becomes necessary that the ointment should be rubbed on the arm and forearm; but this surface may not be sufficient, therefore we must apply it in another way, or to other parts, to produce its effects upon the constitution.

I have seen a true venereal chancre on the middle of the lower lip produce a bubo on each side of the neck, under the lower jaw, just upon the maxillary gland. By applying strong mercurial ointment to the under lip, chin, and swellings, they have been resolved.

§ 5. *Of the Quantity of Mercury necessary for the Resolution of a Bubo.*

The quantity of mercury necessary for the resolution of a bubo must be proportioned to the obstinacy of the bubo, but care must be taken to stop short of certain effects upon the constitution. If it be in the first situation, and yields readily to the first half a drachm of mercurial ointment, made of equal parts of quicksilver and hog's lard, every night, and the mouth does not become sore, or, at most, only tender, then it will be sufficient to pursue this course till the gland is reduced to its natural size; and this, probably, will be a good security for the constitution, provided that the chancre, which may have been the cause of the bubo, heals at the same time. If the mouth is not affected in six or eight days, and the gland does not readily resolve, then two scruples or a drachm may be applied every night; and if there be no amendment, then more must be rubbed in; in short, if the reduction is obstinate, the mercury must be pushed as far as can be done without a salivation.

If there be a bubo on each side, then there cannot be so much mercury applied locally to each; for the constitution most probably could not bear double the quantity which is necessary for the resolution of one. But in such cases, we must not so much attend to the soreness of the mouth as when there is but one; however, we must allow the buboes to go on to suppuration, rather than affect the constitution too much by the quantity of mercury; and, therefore, when there are two buboes, they are more likely to suppurate than where there is only one.

In the second and third situation of buboes, if we find that most probably a sufficient quantity of mercury does not pass through them for their resolution, it may be continued to be thrown in by the leg and thigh to act upon the constitution, as has been already observed. The quantity admitted in this way must be greater than what would be necessary if the whole could be made to pass through the bubo. The mouth must be affected, and that in proportion to the state and progress of the bubo.

The method of resolving buboes occurred to me at Belleisle, in the

year 1761, where I had good opportunities of trying it upon the soldiers; and I can say, with truth, that only three buboes have suppurated under my care since that time, and two of these were in one person, where a small quantity of mercury had considerable effects on the constitution, and, therefore, a sufficient quantity could not be sent through the two groins for their resolution; but in both cases, the suppurations were small in comparison to what they threatened to be.

Many buboes, after every attempt, remain swelled without either coming to resolution or suppuration, but rather become hard and scirrhous. Such, I apprehend, were either scrofulous at first, or became so when the venereal disposition was removed. The cure of them should be attempted by hemlock, sea-water poultices, and sea-bathing, as will be farther taken notice of.

§ 6. *Of the Treatment of Buboes when they suppurate.*

After every known method has been used, buboes cannot, in all cases, be resolved, but come to suppuration. They then become more an object of surgery, and are to be treated in some respects like any other abscess. If it be thought proper to open a bubo, it should be allowed to go on thinning the parts as much as possible. The great advantage arising from this is, that these parts, having become very thin, lose the disposition to heal, which gives the bottom of the abscess a better chance of healing along with the superficial parts; by this means, too, a large opening is avoided, and the different modes made use of for keeping the skin from healing till the bottom is healed become unnecessary.

It may admit of dispute, whether the application of mercury should be continued or not through the whole suppuration. I should be inclined to continue it, but in a smaller quantity; for although the parts cannot set about a cure till opened, yet I do imagine that they may be better disposed to it; and I think that I have seen cases where suppuration has taken place, although under the above mentioned practice, that were very large in their inflammation, but very small in their suppuration, which I imputed to the patient's having taken mercury in the before-mentioned way, both before and while suppuration was going on.

It has been disputed more in this kind of abscess than in others, whether it should be opened, or allowed to burst of itself; and likewise, whether the opening should be made by incision or caustic.

There appears to be nothing in a venereal abscess different from any other to recommend one practice more than another. The surgeon should in some degree be guided by the patient. Some patients are afraid of caustics, others have a horror of cutting instruments; but when it is left wholly to the surgeon, and the bubo is but small, I suppose a slit with a lancet will be sufficient; in this way, no skin is lost. But when a bubo is very large, in which case there is a large quantity of loose skin, perhaps the caustic will answer better, both on account of its destroying some skin, and because the destruction is attended

with less inflammation than what attends incision. If done by a caustic, the lapis septicus is the best;¹ but it is not necessary to open every bubo, and perhaps it may be difficult to point out those where opening would be of service or necessary.

The bubo is to be dressed afterwards according to the nature of the disease, which, I have already observed, is often so complicated as to baffle all our skill. The constitution at the same time is to be attacked with mercury, either by applying it internally or externally; if externally, it should be applied to that side and beyond where the bubo is, as I before directed in treating of the resolution of buboes, for it may have some influence on the disease in its passing through the part.

Mercury, in these cases, answers two purposes; it assists the external application to cure the buboes, and it prevents the effects of the constant absorption of the venereal matter from the sore.

How far it is necessary to pursue the mercurial course with a view to prevention, it is not possible to determine; but it may be supposed that it is necessary to give the same quantity to prevent a disease that would cure one that has already taken place. It will be necessary to continue the course till the bubo is healed, or till it has for some time lost its venereal appearance; but it may be difficult to ascertain this last fact; therefore, we must have recourse to experience, not theory, and continue the course in general till the whole is healed, and even longer, especially if the bubo heals very readily; for we find in many cases that the constitution shall be still tainted after all. However, some restrictions are here necessary; for I have already observed that it often happens that buboes assume other dispositions besides the venereal, which mercury cannot cure, but will even make worse. It is therefore very necessary to ascertain the distinction, which will be taken notice of.

CHAPTER V.

OF SOME OF THE CONSEQUENCES OF BUBOES.

I FORMERLY observed that the venereal disease is capable of bringing latent dispositions or susceptibilities into action. This is remarkably the case with buboes; and I believe the disposition is more of the scrofulous kind than any other. Whether this arises from the buboes being formed in lymphatic glands or not is probably not easily determined.

¹ I once opened two buboes in the same person, one immediately after the other. The first was with the lapis infernalis, which gave him considerable pain, and, therefore, he would have the other opened with a lancet, as the pain would only be momentary. But it was great, and the soreness continued long, while there was no pain in the other, deadened by the caustic, after it had done its business.

It sometimes happens that these sores, when losing or entirely deprived of the venereal disposition, form into a sore of another kind, and most probably of various kinds. How far it is a disease arising from a venereal taint and the effects of a mercurial course jointly is not certain; but most probably these two have some share in forming the disease. If this idea of it were just, it would become a specific disease, and be reducible to one method of cure; but I should suspect that either the constitution or the part hath some, if not the principal share in it; that is, the parts fall into a peculiar disease independent of the constitutional disease or method of cure; for, if it arose out of the two first entirely, we might expect to meet with it oftener. So far as the constitution or the part has a share in forming this disease, it becomes more uncertain what the disease is, because it must in some degree partake of the constitution or nature of the part.

Such diseases make the cure of the venereal affection much more uncertain, because when the sore becomes stationary, or the mercury begins to disagree, we are ready to suspect that the virus is gone; but this is not always the case; the virus is perhaps only less powerful than the new-formed disease, and, as it were, lies dormant, or ceases to act; and when the other becomes weaker, the venereal influence begins to show itself again.

The proper treatment in such cases is to attack the predominant disease; but still, the difficulty is to find out the disease, and to know when it is or is not venereal. The following case explains this difficulty very well:—

A gentleman had a very large venereal bubo, which was opened. He took a great deal of mercury for about two months; but, I suspect, not in sufficient doses, which produced a mercurial habit. The bubo had no disposition to heal, and I was consulted. From the account he gave me, I suspected that he had then too much of a mercurial habit to receive at this time any farther good from that medicine. I therefore advised him to use a good nourishing diet for near a month; after that I put him upon a brisk mercurial course by friction; and the parts put on a better appearance. This course he continued for near two months, and then the sore, although much mended, began to be stationary. I did not conceive that the venereal action was destroyed, and therefore immediately left off the mercurial course, and put him upon a milk diet, and sent him into the country. But not gaining much ground, he had a strong decoction of the sarsaparilla with mezezon given him, which, although continued for above a month, produced little or no effect. I also gave him the cicuta as much as he could bear, with the bark almost the whole time, without effect; new sinuses formed, which were opened, and the sore became extremely irritable, with thickened lips. The dressings were poultices made with the juice of hemlock, sea water, opium, and a gentle solution of lunar caustic; but nothing seemed to affect it. I suspected scrofula, and therefore proposed he should bathe in the sea; but this then could not be done. These different treatments, after mercury had been left off, took up about four months without the least benefit. Being doubtful whether there might not be still something venereal in the

sore, especially as appearances were growing worse, and it was now four months since he had taken any mercury, I was inclined to try it once more, and sent him two portions of ointment, half an ounce each, to rub in in two nights. He had caught a little cold, and therefore did not rub in the mercury the two evenings as ordered; and called upon me the third day and told me he was much better. The sore now became easy, the watery or transparent inflammation began to subside, the lips became flatter and thinner, and the edges of the sore began to heal. I then desired him not to rub in the ointment, but wait a little. In eight or ten days the sore had contracted to three-quarters of its former size, and had all the appearance of a healing sore.

Quære: What conclusions should be drawn from this case? I think the following: that the virus may be gone, although the sore may have no disposition to heal; therefore, we are not to look upon the not healing of a bubo as a sign of the presence of the original disease. Secondly, that the sarsaparilla, mezereon, cicuta, and the bark will not succeed in all such cases; and, thirdly, that some of these diseases are capable of wearing out the unhealthy disposition of themselves, and that we should not be too ready to attribute cures to our treatment; for if the mercury had been rubbed in, and the same effects had still taken place, I should then have certainly pursued the mercury with vigor, and attributed the cure to it; but I should not have rested here; I should have related the case, as an instance of the disease continuing after repeated courses of mercury, and should have contended that it is necessary in such cases, where the mercury appears to lose its power, and even do harm, to wait, and season the constitution to strength, and the loss of the mercurial habit; and that even four months are sometimes necessary for this purpose, after which we must begin again to give mercury.

A gentleman had a common gonorrhœa, which was severe. I gave him an injection of a grain of corrosive sublimate in eight ounces of water with a few mercurial pills. After having continued the injection for ten or twelve days, without any visible benefit, I gave it as my opinion that it would be of no service to continue it any longer, and therefore desired he would be quiet for a little time. About this time a swelling in each groin took place, and supposing them to be venereal, I ordered mercurial ointment to be rubbed into both the legs and thighs, to resolve them if possible. He appeared to be less uneasy about the buboes than he was about the gonorrhœa, but I told him that the cure of that complaint would be insensibly involved in the resolution of the buboes. I spoke too confidently of my power with respect to the resolution of the buboes, for they both suppurated, although the supuration was small in comparison to the magnitude of the buboes when they first inflamed. The frictions were left off.

While we were attempting to resolve the buboes he got well of the gonorrhœa. The skin covering the buboes became thin; they were both opened, one with a caustic the other with a lancet; he then was ordered to rub in mercury again on the thighs and legs for their cure. They began soon to look well, and to close fast; but when about half healed they became stationary. I suspected that a new disease was

forming. On continuing the frictions a little longer they began to inflame and swell anew, and a suppuration took place about half an inch above each of the first suppurations, which broke into the first. I left off the mercury immediately upon their inflaming, and said that now a new disease had formed. I ordered poultices made with sea-water to be applied, and also a decoction of sarsaparilla to be taken; but this appeared not to be sufficient for the cure of this new disease. I then ordered him to go into the tepid sea-bath every evening, the heat of the water to be about ninety degrees. By the time he had been in the bath four times the inflammation and swelling had very much abated, and the first sores, or original buboes, were beginning to heal. He went on with the bathing every evening for about three weeks, when the sores rather began to look worse; I then suspected that the venereal disposition was become predominant, and I ordered the friction as before. In about a fortnight the first buboes healed; but the second suppurations were not yet healed; then I supposed it to be entirely the new-formed disease, and he went into the country, where I desired he might go into the open sea every day, as he then could have an opportunity, which he did, and got perfectly well, and has continued so.

This case plainly shows that there was another disposition formed besides the venereal, which was put into action by the venereal irritation.

I have seen some buboes most exceedingly painful and tender to almost everything that touched them, and the more mild that the dressings were, the more painful the parts became.

In some the skin seems only to admit the disease, ulceration going on in the surrounding skin, while a new skin forms in the centre, and keeps pace with the ulceration, forming an irregular sore like a worm-eaten groove all round. This, like the erysipelatous inflammation, as also some others, appears to have only the power of contaminating the parts that have not yet come into action; and those that have already taken it seem to lose the diseased disposition, and heal readily.

In some they spread to an amazing extent, as the following case shows, the circumstances of which are very remarkable:—

A young gentleman, aged eighteen years, in consequence of a venereal infection, had two buboes, which were both opened. They were treated in the usual manner, and at first put on a favorable appearance; but when they were nearly healed they began to ulcerate at their edges, and spread in all directions, rising above the pubes almost to the navel, and descending upon each thigh. His nights became restless, and his general health was affected. A great variety of medicines were tried, particularly mercury in different forms, with little or no effect. Extract of hemlock did more good than anything else, and was taken in unusual quantities. An ounce was swallowed in the course of the day for some time, which was afterwards increased to an ounce and a half, two ounces, and even two ounces and a half. It produced indistinct vision and blindness, loss of the voice, falling of the lower jaw, a temporary palsy of the extremities, and once or twice a loss of sensation; and notwithstanding he was almost every night in a state, as it were, of complete

intoxication from the hemlock, his general health did not suffer; but, on the contrary, kept pace in his improvement with the ulcers. They could not, however, be healed by the hemlock; and, among many other things, Ethiop's mineral and Plummer's pill were liberally given, seemingly with advantage. Recourse was had to the hemlock from time to time. A great many different kinds of dressings were made trial of, none of which were found to exceed dry lint. The ulcers were nearly all healed, after having tormented him upwards of three years, when committing some irregularities in diet, and the sores getting worse, he returned to the extract of hemlock, which he had for some time laid aside, and of himself swallowed in the course of the morning ten drachms. This quantity was only the half of what he had formerly taken in twenty-four hours, but his constitution had been at that time gradually habituated to the medicine. The ten drachms produced great restlessness and anxiety; he dropped insensible from his chair, fell into convulsions, and expired in two hours.

To return to the cure of buboes: Where they only become stationary, and appear to have but little disposition to spread (which is most common), and where perhaps a sinus or two may be found running into them from some other gland, I have often seen them give way to hemlock sooner than to anything I am acquainted with, especially if joined to the bark. If the hemlock is applied both internally and externally, it answers better.

Sarsaparilla is often of singular service here, as well as in other cases arising seemingly from the same cause; and I have seen sea-bathing of great service, as also sea-water poultices.

At the Lock Hospital, they use gold-refiners' water as an application, which is of service in some cases. Dr. Fordyce recommends the juice of oranges to be drunk in large quantities, which I have seen good effects from in some cases. The mezereon is, in some instances, of singular use.

[RICORD.—Hunter justly observes that, in the treatment of buboes, attention should be paid not only to the specific cause to which they may be due, but also to all the attending circumstances in the case. In some instances, the latter deserve to occupy our attention alone, either throughout the whole case, when the bubo is entirely dependent on them, or for the time being, so long as they constitute a serious complication; then, after their disappearance, we may return to the special treatment of the virulent disease. But having established this point, Hunter, true to his doctrine, seeks nothing farther, than to ascertain the quantity of mercury which should be taken into the system, and the most suitable mode for administering it. To Hunter's practical observations, I will append the following propositions:—

We should endeavor to prevent the development of buboes. For this purpose, whenever a person is affected with a primary disease which may lead to a bubo, we should recommend the most perfect repose, both of the diseased parts and of the whole system.

The cure of those affections which ordinarily precede a bubo should be as rapid as possible, since so long as they last, a bubo may be developed.

In the treatment of the precursory affections, general stimulants and local irritants should be avoided; yet, after what we have said of the cauterization of chancres, this rule should not prevent our employing all necessary means for a cure.

The moment a gland swells in a suspicious manner, its resolution should be attempted as soon as possible.

The most powerful agents at the outset, in the abortive treatment, are cold, compression, mediate cauterization, and mercurials.

The application of ice is often successful, when made at the very outset. If the tumor increase or become painful under its influence, it does more harm than good, and it should immediately be omitted.

Compression is a powerful abortive means, and may be applied by bandages. A warm brick has lately been proposed, to act on the tumor by its weight and its heat. Compression, to be beneficial, must excite no pain. A fact to be noted is, that buboes rarely appear under well-applied bandages in persons affected with hernia.

A method, which has recently occupied the attention of practitioners, and which was first proposed by M. Malapert, and afterwards by M. Reynaud, consists in attempting the rapid resolution of buboes by cauterizing the integument over them. This is done by covering the tumor with a blister, and afterwards applying to the denuded surface a pledget of lint, soaked in a solution of twenty grains of corrosive sublimate to an ounce of water. This pledget is left in contact with the vesicated surface about two hours, and is then replaced by a linseed-meal poultice, with the addition of laudanum. On the fall of the eschar, according to its depth and the effect produced, the application is repeated, or the denuded surface is touched with the solution by means of a camel-hair pencil.

This active treatment is far from being successful in so many cases as has been asserted. In most cases where it has been used, an accurate diagnosis of the nature of the tumor could not be made; it is therefore probable, and I may say certain, that the larger part of the cures obtained have been in simple and non-virulent buboes. And this is not an unimportant fact, since, if it be true, we can effect a cure by other and much less disagreeable means than this cauterization, which is always very painful, and is almost invariably followed by unsightly and indelible scars.

The objective and direct actual cautery should never be applied at the outset, nor the potential cautery and seton, which have lately been recommended.

When the affection preceding the bubo requires mercury, this mineral may prevent the development of the bubo, and it may also be efficacious as an heroic resolvent and active antiphlogistic, at the outset of any glandular swelling. We should therefore never fail to employ it in the abortive treatment, except when it is positively contra-indicated.

The best mode of administering mercury in the particular case under consideration, is by the skin. As Hunter directs, regard should be paid, as far as possible, to the connection existing between the absorbing surface and the affected ganglia; but precision on this point is often

impossible and even useless, for it is enough to use those neighboring parts, having sufficient extent, and which especially are the seat of no local irritation, liable to interfere with the absorption. The mode which I decidedly prefer, and which I employ at the outset of very many indolent buboes, as well as at a more advanced stage when there is no inflammation, is a blister, afterwards dressed twice a day with a scruple and a half of strong mercurial ointment, and covered with a rye-meal poultice, which should be changed two or three times in the twenty-four hours.

If the bubo goes on enlarging and is attended with acute symptoms, antiphlogistic treatment of appropriate energy should be applied, whether the bubo is virulent or not. Among the ordinary antiphlogistic agents, which it is useless to enumerate, leeches are generally the most effectual. In applying them, they should be placed at a greater distance from the bubo the nearer the latter is to the time of opening, especially when it is thought to be virulent; for in that case, as soon as it is opened, the leech-bites will be inoculated, become chancres, and spread the disease to a wide and pernicious extent.

As soon as pus has formed in a bubo, if it is supposed to be virulent and its progress has been acute, it is entirely useless to attempt resolution. No matter what means are employed, if the walls of the abscess are chancrous surfaces inclosing virulent pus, resolution is no longer possible; and the purulent perspiration pretended to be obtained by MM. Malapert and Reynaud's method, is only an infiltration of the matter through sieve-like openings made by the caustic in the skin overlying the abscess. If, in any case, resolution has been obtained after the formation of an abscess, it could only have been in simple non-virulent buboes. In doubtful cases, where, after pus has formed, we are led to attempt resolution on account of our fear of a cicatrix or the timidity of the patient, the attempt must not be continued if the abscess extends or the skin over it becomes thin.

Contrary, then, to the advice given by Hunter, we should open buboes early in the great majority of cases, so as to avoid the inevitable bad effects which result from the incarceration of virulent pus.

When a bubo is indolent, either at the outset or after an acute stage, or still more frequently after a subacute stage, antiphlogistic remedies are less frequently applicable. The means which were mentioned in speaking of the abortive treatment are here of use. In cases of indolent buboes, which invariably accompany indurated chancres, we see the powerful effects of local mercurial frictions, of the emplastrum de Vigo, and especially of constitutional treatment.

A combination, very often efficacious in the treatment of non-specific indolent buboes, consists in the use of blisters, mercurial ointment, and cataplasms, as above directed, so long as the bubo continues to improve; but as soon as it remains *in statu quo*, the blister is allowed to heal, and compression is applied and continued while the swelling diminishes in size, but is abandoned and the blister resumed if it ceases to have any effect; thus the two are alternated until a cure is obtained, or so long as any benefit is derived.

Those indolent and indurated buboes which do not yield to the

above treatment are generally dependent on something more than syphilis. In most cases, especially of deep buboes, there is some other cause, and this cause is frequently scrofula. If the ordinary remedies for scrofula, such as the bitter herbs, preparations of iodine, cod-liver oil, M. Personne's iodized oil,¹ quinia, the various tonics, suitable diet, and a healthy residence, have no effect, even when aided by local resolvent applications, such as salves of iodide of lead, of iodide of potassium, and of antimony, cauterization with Gondret's salve,² alkaline or sea-baths, etc., we may resort to extirpation of the diseased ganglia, or destroy them by inducing simple suppuration, or by caustic.

But as it is not always easy to dissect them out, they are most frequently destroyed by the latter means. The ordinary modes of promoting maturation and suppuration are too feeble to succeed in this case; and more powerful agents must be looked for. Escharotic troches, which are, perhaps, too much neglected at the present day; setons, which have been extolled beyond measure as a new remedy, which they are not; crushing or bruising the diseased ganglia, a method proposed by the ingenious and learned M. Malgaigne, but a little too painful, and above all, unsafe—these means and the actual cautery may be applicable to some cases of these obstinate glandular swellings, the cause of which is obscure. It has also been proposed to make numerous punctures in the buboes, in order to stimulate them and hasten their resolution. But a method which I prefer to all others, and which is the most easily managed, and the most certain in its results, is the application of Vienna paste. This caustic is applied over an extent of two-thirds of the diseased ganglion, so as to destroy the cutaneous surface; then, on the fall of the eschar, which is hastened by basilicon ointment and other digestives, the indurated ganglia are attacked layer by layer; increasing our caution, however, as we proceed in depth, and stopping within accessible limits, or when we approach the neighborhood of vital parts. This method is generally very rapid, and the deep ganglia undergo resolution as the superficial

¹ Bulletin de l'Académie de Médecine. Paris, 1851, t. xvi. p. 1141.

[Not being able to refer to the above work, I give another formula for iodized oil, said to be superior to that of M. Personne. (See *Répertoire de Pharmacie*, 1852, p. 31.)

R.—Iodinii puri gr. xxv;
Olei amygdalæ Oij.—M.

The iodine is rubbed up in a mortar with a small quantity of the oil, the rest of the oil added, and the whole heated in a porcelain vessel over a slow fire, until the color is reduced to that of oil of sweet almonds; it is then withdrawn from the fire and allowed to stand ten hours.

A syrup of this oil is thus prepared:—

R.—Olei iodinii ʒj;
Aquæ ʒj;
Sacchari puri ʒij;
Acaciæ ʒv.—M.

When cod-liver oil is imperfectly assimilated by the stomach, M. Trousseau replaces it with advantage, chiefly in his private practice, by the following composition: Fresh butter ʒiv; iodide of potassium gr. j; bromide of potassium gr. iv. This butter is consumed in the course of the day, spread upon bread in the ordinary manner. (*L'Union Médicale.*)—Ed.]

² For the formula for this ointment, see the United States Dispensatory, page 84.—Ed.

ones are destroyed. However, some glandular swellings, which are at first considered venereal buboes, afterwards undergo such degenerations that they are no longer included within the limits of our present subject; they consist of incurable scrofulous or carcinomatous developments, which neither steel nor fire can prevent from proving fatal.

In indolent buboes, resolution is still possible after suppuration has taken place, and the pus should never be so speedily evacuated as in acute buboes. These buboes are more commonly simple than virulent, and we can also rely on the internal suppuration to produce resolution of the rest of the swelling more than in acute buboes.

Suppuration in buboes is generally easily recognized; but sometimes it takes place in the deeper layers of ganglia, and then although very abundant it does not escape above the indurated masses which cover it, except by means of little fistulous passages which appear on the surface as small, soft, and fluctuating points, surrounded by a hardened and adherent border.

As soon as it is necessary to open a bubo, care should always be taken to avoid as much as possible the deformity of a large cicatrix. It should be a rule to make only very small openings, unless we are compelled to make larger by the abundance of the suppuration, by its extent beneath the surface, or by the thinness and morbid changes of the skin. In some cases, several punctures are to be preferred to one large incision. Caustics should rarely be used to give vent to the pus except in indolent buboes, where it is also desired to produce some degree of stimulation. Escharotics are to be preferred when the skin is so much changed that there is no hope of preserving it, and they are especially applicable to virulent buboes, since the edges of a wound made by caustic are less likely to be inoculated than those made by a cutting instrument.

Still, some buboes, in which the skin is extensively detached, may be induced to cicatrize, without paring away the skin, by the repeated application of blisters after the buboes are opened, and especially by filling the cavity with powdered cantharides for several days in succession, until healthy granulations spring up.

In conclusion, a bubo when opened is either simple or virulent. In the latter case, it constitutes a true chancre, and should receive the treatment of a chancre.—RICORD.]

PART VI.

CHAPTER I.

OF THE LUES VENEREA.

THE lues venerea, I have already observed, arises in consequence of the poisonous matter being absorbed and carried into the common circulation. This form of the disease, which I have called the constitutional,¹ would appear to be much more complicated, both in the different ways in which it may be caught, and in its effects when caught, than either a gonorrhoea or chancre. It generally arises from the local complaints before taken notice of, the matter being absorbed and carried into the constitution. The matter, however, appears to be capable of being taken into the constitution by simple application, without first having produced either of the before-mentioned local effects, as I observed in treating of the formation of the bubo; but this seems to be only when it is applied to some particular parts of our body, such as may be called a half internal surface, as the glans penis. I think it is not capable of being received by the absorbents of the sound skin;² but this is matter only of opinion.

It may likewise be received into the constitution by being applied to common ulcers, although not necessarily rendering these ulcers themselves venereal; also by wounds, as has been observed; but, I believe, always previously producing ulceration in the wound.

Many other modes of infection have been supposed, but, I believe, erroneously, such suppositions most probably having taken their rise from ignorance or deceit, two great sources of error in this disease.

It is most likely that contamination takes place about the beginning of the local complaints, especially when that is a chancre; for there is in most cases less chance of its happening afterwards, because the

¹ The term *constitutional* is, perhaps, not strictly a proper term, for by constitutional disease strictly I would understand that in which every part of the body is acting in one way, as in fevers of all kinds, either sympathetic or original; but the venereal poison appears to be only diffused through the circulating fluids, and, as it were, to force certain parts of the body to assume the venereal action, which action is perfectly local, and takes place in different parts in regular succession of susceptibilities; there are but few parts, therefore, acting at the same time; and a person may be constitutionally affected in this way, and yet almost every function may be perfect.

² Added: "At least I know no instance of it."—HOME.

patient commonly flies to medicine, which generally becomes a prevention of contamination. For if it could take place through the whole time of the cure, we should have the parts contaminated at different periods, coming into action at different times, each according to its stated time, although in similar parts both in their nature and other circumstances; but as these similar parts do not vary much in the time of coming into action, it is reasonable to suppose that they were contaminated at or near the same time, and therefore that no contamination takes place in the time of the cure, although we may suppose that the power of absorption is equally strong then as at any other time.

In cases of contamination from gonorrhœa, where no mercury has been taken, we might expect this irregularity in similar structures; but as contamination so seldom takes place in this way, we have not a chance of a great variety from such; however, it would be worth while to ascertain the matter, which from a great many cases might be done.

Without being very exact in ascertaining the different proportions in those who have the lues venerea originating from the three several modes above described, I think we may venture to say, from general practice or experience, that where one contracts it from the first cause; that is, where no local effects have been produced, a hundred have it from the second, or gonorrhœa; and where one has it from the second, a hundred have it from the third, or chancre; and perhaps not one in five hundred who have connection with venereal women have it in the first way, and not one in a hundred have it from the second; while not one in a hundred would not escape it from the third, if the means of prevention were not made use of in the common method of cure of the chancre.

[RICORD.—Syphilography, like all other branches of pathology, has in every age received its share of influence from the doctrines in vogue. Whenever a great system has ruled the public mind, syphilographers have hastened to adapt preceding treatises to the fashion of the day.

At one time the lymphatic vessels were assigned as the means of transport, and the fat-globules as the reservoir of the virus in that affection which Hunter has designated under the generally received name of constitutional syphilis, and which has also been called confirmed syphilis, secondary, consecutive, or general symptoms, &c.; at other times, it has been thought that the virus existed in all the fluids of the body, as Hunter supposed, or that it was conveyed by the blood alone, either suspended in it without intimate combination, or else as an element which had profoundly modified that fluid. On the other hand, while solidism sought for material organic changes alone, without any intermediate vitiated fluids, certain metaphysicians and pure vitalists could see in constitutional syphilis nothing but the ordinary effects of sympathy, or the results of an expansive electro-syphilitic fluid.

But without losing ourselves in the field of hypotheses, from which our more positive age tends to depart farther and farther, I will place

the following propositions by the side of the principal propositions of Hunter:—

Constitutional syphilis is the result of the absorption of the syphilitic virus.

There can be no absorption without previous ulceration; a chancre being a necessary antecedent, no matter what symptoms reveal or conceal it. Since Benardin Tomatino, the assertions of Hunter, Fabre, Benjamin Bell, &c., in favor of the existence of non-consecutive syphilis have proved nothing. Not a single one of their facts is incontrovertible with the knowledge of the present day. The proportions which Hunter gives prove that the exceptional case, which he supposed he had observed, was only an apocryphal or badly explained fact.

Constitutional syphilis, without a pre-existing chancre, is only possible by hereditary descent.

Experimental inoculation has proved that no temperament nor idiosyncrasy is refractory to the primary action of syphilitic virus.

The most careful observation has demonstrated, contrary to the assertions of Hunter and his followers, that every person is not susceptible of constitutional infection; and this immunity cannot be explained on the ground of either the constitution, temperament, age, or sex.

Experience has, however, shown that an individual who has already had constitutional syphilis, is incapable of contracting a new general infection; and, if new chancres occur in such a person, they will not present specific induration.

There are three things to be considered with reference to constitutional syphilis: the relative or absolute predisposition of the individual, without which infection cannot take place; the diathesis or peculiar modification which is impressed on the constitution by this infection, and which may exist a certain time without manifesting itself; and, finally, the various symptoms of constitutional syphilis.

If the dogmas of humoral pathology had ever been lost, syphilis would suffice to revive them. For, in this disease, the blood becomes charged with the poisonous principle; and the tissues, thus subjected to a vicious nutrition, are infected, and undergo successive and regular changes, to a certain degree in the order of their vitality.

But something more than a syphilitic diathesis is necessary for the development of constitutional symptoms; for a person may continue a long time under its influence alone without showing any constitutional symptoms, and the different times and various seats of the appearance of the latter, in the same or different individuals, prove the necessity of accessory causes.

There must be, then, some accidental interruption of the integrity of the functions of the body for secondary symptoms to occur under the influence of a syphilitic diathesis; and their appearance may be retarded or definitely put off by physiological, hygienic, or therapeutic means.

At the present day, when many primary ulcers are left to themselves without treatment, we can better observe the time and regular order

of appearance of syphilitic symptoms. When nothing interferes with the course of the disease, it is always composed of three periods, viz., the period of the primary ulcer, the consequence of direct contagion, and capable of inoculation, but without the power to descend from parent to child; the period of secondary symptoms, the consequence of absorption of the virus, and transmissible by hereditary descent, without being inoculable; and, finally, the period of tertiary symptoms, which not only are not inoculable, but which cannot be transmitted by hereditary descent under their peculiar type, although, in consequence of a kind of degeneration or modification of the syphilitic virus, they are perhaps one of the most fruitful sources of scrofula.

Primary symptoms appear immediately after contagion, and within the time of evolution that I have elsewhere specified; secondary symptoms rarely occur before the third week following the appearance of the primary symptoms, and more rarely still after the sixth month; whilst tertiary symptoms scarcely ever appear before the sixth month, and may not until after several years.

Primary symptoms consist of chancres in their different modifications or varieties.

To secondary symptoms are referred certain affections of the skin, and of some parts of the mucous membranes and their dependencies; also, some peculiar pathological affections of the eyes, lymphatic ganglia, etc. Finally, tertiary symptoms consist of certain changes which take place in the subcutaneous or submucous cellular tissue, in the testicles, in the fibrous and osseous tissues, and in the deep organs. If we could properly admit a period of incubation in syphilitic diseases, as Jacques Catanéo¹ understood it, the time intervening between the primary ulcer and constitutional symptoms could alone be considered as such.

Proper treatment of primary symptoms may prevent the development of secondary symptoms. Very often this treatment cures the primary, and arrests only the secondary symptoms; in this way is explained the late appearance of diseases of the periosteum and bones, for example, without the secondary intermediate link, in patients who have taken mercury.

When once the primary ulcer is healed, it cannot be reproduced except by a new contagion; while secondary and tertiary symptoms may appear repeatedly, and at various intervals, within periods which cannot be limited.

An apparent inversion in the succession of secondary and tertiary symptoms is observed only in persons who have undergone treatment.

After the appearance of constitutional symptoms, the *syphilitic diathesis* may cease either spontaneously by the *vis naturæ*, or in consequence of appropriate treatment, and yet the symptoms still persist under the influence of purely local causes, as is observed especially in many cases of diseases of the bones.—RICORD.]

¹ Jacques Catanéo.—*De morbo gallico*, 1505.—Ed.

§ 1. *Of the Nature of the Sores or Ulcers proceeding from the Lues Venerea.*

In consequence of the blood being contaminated with real venereal pus, it might naturally be supposed that the local effects arising therefrom would be the same with the original which produced them; but from observation and experiment, I have reason to believe that this is not so.

In considering this subject, we may first observe that local effects, from the constitution, are all of one species, that is ulcers, let the surface upon which they appear be what it will, whether the throat or common skin, which is not the case in the local application of the matter in gonorrhœa and chancre; for there I observed that it produced effects according to the nature of the surfaces. Now, if the matter, when in the constitution, were to act upon the same specific principles with that which is applied, we should have gonorrhœas when it attacks a canal, sores or chancres when it attacks other surfaces; but it has never been yet known to produce a gonorrhœa from the constitution, though this has, indeed, been suspected. For some gonorrhœas, the origin of which has not been clear, and which have not easily given way to the common methods of cure, have been supposed to have arisen from the constitution.¹ Whenever the disease affects the mouth and nose, it has always been looked upon as producing a true chancre; yet even here I find that such ulcers in their first appearance are very different from chancres. The true chancre, I observed, produces considerable inflammation, which of course brings on quickly suppuration, attended often with a great deal of pain; but the local effects, from the constitution, are slow in their progress, attended with little inflammation, and are seldom or never painful, except in particular parts. However, this sluggishness in the effects of the poison is more or less according to the nature of the parts which become diseased; for when the tonsils, uvula, or nose are affected, its progress is rapid, and the sores have more of the chancre in their appearance than when it affects the skin; yet I do not think that the inflammation is so great in them as in chancres that are ulcerating equally fast.

It has been supposed that even all the secretions from the contaminated blood could be affected so as to produce a like poison in them; and as the parts of generation are thrown in the way of receiving it, when fresh contracted, so they still lie under the censure of having it returned upon them from the constitution. Hence it has been supposed that the testicles and vesiculæ seminales may be affected by the disease; that the semen may become venereal, may communicate the disease to others, and, after impregnation, may even grow into a pocky

¹ The existence of gonorrhœa from this cause is still believed by M. Vidal, who says: "On the mucous membrane of the genital organ, constitutional syphilis may assume all the forms which we have observed in primary syphilis. Thus, cases of constitutional urethral gonorrhœa have been met with, and also of balano-posthitis. In this case, the affected mucous surface tends to assume the copper color which is characteristic of secondary affection." (*Op. cit.*, p. 412.)—Ed.

child. But all this is without foundation: otherwise, when a person has the lues venerea, no secreting surface could be free from the state of a gonorrhœa, nor could any sore be other than venereal. Contrary to all which, the secretions are the same as before; and if a sore is produced by any other means in a sound part, that sore is not venereal, nor the matter poisonous, although formed from the same blood.

The saliva in the case of a mad dog, being a natural secretion rendered poisonous, may be brought as an argument in contradiction to this theory; yet it is easily accounted for, and might be produced rather as an argument in support of it. In the dog, there is an irritation peculiar to the hydrophobia in the salivary glands; but the other and natural secretions of the same dog are not capable of giving this infection, because they are not susceptible of the same specific irritation.

The breath and sweat are supposed to carry along with them contagion, the milk of the breast is supposed to be capable of containing venereal poison and of affecting the child who sucks it; but there are several reasons which overturn these opinions. First, we find that no secretion is affected by this poison, excepting where the secreting organs have been previously affected by venereal inflammation or irritation, or its specific mode of action. Again, if they were contaminated so as to produce matter similar to that of an ulcer in the throat, such matter would not be poisonous, nor possess a power of communicating the disease, as will be explained more fully hereafter. Farther, true venereal matter, even when taken into the stomach, does not affect either the stomach or constitution, but is digested, as was evident in the two following cases.

A gentleman who had chancres which discharged largely, used to wash the parts with milk in a teacup with some lint, and generally let the lint lie in the cup with the milk. A little boy in the house stole the milk and drank it, but whether or not he swallowed the lint was not known. No notice was taken of this by the gentleman either to the family or the boy; and attention, unknown to the family, was paid to the boy even for years, but nothing happened that could give the least suspicion of his having been affected either locally in the stomach or constitutionally.

A gentleman had a most violent gonorrhœa, in which both the inflammation and the discharge were remarkably great. He had also a chordee, which was very troublesome at night. In order to cool the parts, and keep them clean, he had a small basin of milk by the bedside, in which, when the chordee was troublesome, he got up and dipped or washed the penis. This operation he frequently repeated during the night. Under such complaints he allowed a young lady to sleep with him. Her custom was to have by the bedside a basin of tea to drink in the morning before she got up; but unfortunately for the lady, she drank one morning the milk instead of the tea. This was not known till she got up, which was five or six hours afterwards. I was sent for directly, and in the mean time she endeavored to vomit, but could not. I ordered ipecacuanha, which proved slow in its operation. She vomited, but it was more than eight hours after drinking

the milk and water, and what came up was nothing but slime, mucus, or water, the milk being digested. I was attentive to what might follow; but nothing uncommon happened, at least for many months.¹

It is also supposed that a foetus in the womb of a pocky mother may be infected by her. This I should doubt very much, both from what may be observed of the secretions, and from finding that even the matter from such constitutional inflammation is not capable of communicating the disease. However, one can conceive the bare possibility of a child being affected in the womb of a pocky mother, not indeed from the disease of the mother, but from a part of the same matter which contaminated the mother, and was absorbed by her; and whether irritating her solids to action or not may possibly be conveyed to the child, pure as absorbed; and if so, it may affect the child exactly in the same way it did or might have done the mother. This idea has been carried still farther; for it has been supposed that such a contaminated child could contaminate the breasts of a clean woman by sucking her; the possibility of which will be considered presently. We may observe that even the blood of a pocky person has no power of contaminating, and is not capable of giving the disease to another even by inoculation; for if it were capable of irritating a sound sore to a venereal inflammation, no person that has this matter circulating, or has the lues venerea, could escape having a venereal sore whenever he is bled or receives a scratch with a pin, the part so wounded turning into a chancre. For if venereal matter may be on the point of the lancet, or on the point of the pin, the punctures must become chancres.

[RICORD.—Hunter is perfectly right when he says that secondary syphilitic symptoms are different from primary; but the difference is less in their physical form than in the nature of their morbid secretion. The truth is, that the aspect of an ulcer, its situation, the time of its appearance, the degree of inflammation attending it, and our appreciation of the mode of action of its supposed cause, may often deceive us; but the nature of the pus, inoculable only in primary ulcers, will never fail to establish the difference. Who would venture to say, at the present day, that the local effects of constitutional syphilis are all of one kind, always ulcers slow and indolent in their course, while primary symptoms, appearing in the form of gonorrhœa or chancre, according to their seat, are more rapid in their progress, and attended with inflammation and pain? Indeed, when we reflect on what I have had occasion to say relative to primary ulcers, the diversity of the tissues which may be affected by constitutional syphilis, and the secondary and tertiary forms which the latter assumes, dependent on the situation of the affected tissues, the physiological functions of the diseased

¹ These two cases, conformable to all that is positively known of the transmission of syphilis, and all that has been proved by experiment, are appropriately recalled to mind at the present day, when certain persons report, without commentary, the case of a man who, to be revenged on his faithless wife and punish her lover, contrived to give the latter a gonorrhœa by administering to him every morning some milk, to which he added muco-pus from a discharge that he had contracted for the purpose!

—RICORD.

organs, the period at which the symptom is observed, and the complications and influences which it receives from a multitude of modifying circumstances, often appreciable, but sometimes unknown, we are convinced that the general rule laid down by Hunter is susceptible of too many exceptions not to be called in question.

The truth is, that the secretions of constitutional syphilis do not possess the same prerogative as the pus of a primary ulcer, which alone is inoculable. Thus, as Hunter has shown, neither the blood, saliva, milk, semen, nor sweat of an infected person, can contaminate the tissues on which they are deposited; and, as a complement of the excellent reasons and good observations which Hunter has given to support this opinion, I will add the still more conclusive results of experiment; inoculation with these fluids having always been negative. If the existence of facts opposed to this doctrine has gained credence, it is because they were imperfectly appreciated, though sanctioned by the authority of any name, even that of Bell. It is doubtless true that the saliva or semen may become impregnated with inoculable pus, and give positive results on inoculation, from coming in contact with a primary ulcer; but they will have no effect without this direct mixture.

Yet the blood, though it produce no more effect when inoculated, is the vehicle which conveys the virus produced by the primary ulcer. But, as we have elsewhere seen, so soon as the virus is mingled with the circulation, it undergoes a modification, in consequence of which it is no longer inoculable; and, though it still act on the infected individual, it does so from the fact that it passes through various organs which are subjected to this vitiated nutrition only because they possess certain inherent susceptibilities due to their situation, their functions, or more commonly to accessory causes, without which no effect is produced. These causes explain the times of development, the relative situations, the forms, &c., of secondary symptoms in different individuals.

Again, in the fact that the blood is poisoned, and the nutrition of the tissues consequently vitiated, we have an explanation—clearly anticipated by Hunter, in spite of his doubts—of the transmission of constitutional syphilis from mother to offspring. In proof of this transmission, we need no evidence (which must often be questionable) of the morality of the mother, such as is required in cases of direct transmission from father to child, without the mother apparently being diseased, and can rely on the simple observation of facts, which, we find, incontestably demonstrate its existence.—RICORD.]

§ 2. *Of the Matter from Sores in the Lues Venerea compared with that from Chancres and Buboos.*

When the matter has affected the constitution, it from thence produces many local effects on different parts of the body, which are in general a kind of inflammation, or at least an increased action occasioning a suppuration of its own kind. It is supposed that the matter produced in consequence of these inflammations, similar to the matter

from a gonorrhœa or chancre, is also venereal or poisonous. This, I believe, till now, has never been denied; and, upon the first view of the subject, one would be inclined to suppose that it really should be venereal; for, first, the venereal matter is the cause; and, again, the same treatment cures both diseases; thus mercury cures both a chancre and a lues venerea; however, this is no decisive proof, as mercury cures many diseases besides the venereal. On the other hand, there are many strong reasons for believing that the matter is not venereal. There is one curious fact which shows it is not venereal, or, if it be, that it is not capable of acting in some respects on the same body or same state of constitution as the matter does which is produced from a chancre or gonorrhœa. The pus from these latter, when absorbed, generally produces a bubo, as has been described; but we never find a bubo from the absorption of matter from a pocky sore. For instance, when there is a venereal ulcer in the throat, we have no buboes in the glands of the neck; when there are venereal sores on the arms, or even suppurating nodes on the ulna, there are no swellings of the glands of the armpit; although such will take place if fresh venereal matter is applied to a common sore, on the arm, hand, or fingers. No swelling takes place in the glands of the groin from either nodes or blotches on the legs and thighs. It may be supposed that there is no absorption from such sores; but I think we have no grounds for such supposition. Its mode of irritation, or the action of the parts affected, is very different from what happens in the chancre, gonorrhœa, or bubo, being hardly attended with inflammation, which in them is generally violent.

It might be supposed that a constitution truly and universally pocky is not to be affected locally by the same species of matter; but from the following experiments it would appear that matter from a gonorrhœa or chancre is capable of affecting a man locally that is already pocked; and that matter from pocky sores, arising from the constitution, has not that power.

A man had been affected with the venereal disease a long time, and had been several times salivated, but the disease still broke out anew. He was taken into St. George's Hospital, affected with a number of pocky sores; and before I put him under a mercurial course I made the following experiment. I took some matter from one of the sores upon the point of a lancet, and made three small wounds upon the back, where the skin was smooth and sound, and deep enough to draw blood. I made a wound similar to the other three with a clean lancet, the four wounds making a quadrangle; but all the wounds healed up, and none of them ever appeared afterwards.

This experiment I have repeated more than once, and with the same result. It shows that a pocky person cannot be affected locally with the matter proceeding from the sores produced by the lues venerea. But to see how far venereal matter was capable of producing chancres on a pocky person, I made the following experiment.

A man, who had venereal blotches on many parts of his skin, was inoculated in sound parts with matter from a chancre, and also with matter from his own sores. The wounds inoculated with the matter

from the chaneres became chancres; but the others healed up. Here, then, was a venereal constitution capable of being affected locally with fresh venereal matter. This experiment I have likewise repeated more than once, and always with the same effect.

I ordered a person at St. George's Hospital to be inoculated with the matter taken from a well-marked venereal ulcer on the tonsil, and also with matter from a gonorrhœa, which produced the same effects as in the preceding experiment; that is, the matter from a gonorrhœa produced a chancre, but that from the tonsil had no effect.

A woman, aged twenty-five, came into St. George's Hospital, August 21, 1782, with sores on her legs, and blotches over her body. Her husband gave her the venereal disease December, 1781. Her symptoms then were a discharge from the vagina, and a small swelling of the glands of the groin, which were painful. She had taken some pills supposed to be mercurial. February, 1782, about three months after being infected, the discharge stopped; but the swelling, which had been gradually increasing ever since its first appearance, had now suppurated. She applied some ointment to it, which was brought to her by her husband, and in two months it got well, that is, in April, 1782. After the bubo got well a discharge from the vagina came on, for which she took more of the same pills she had taken before. After this time blotches came out over her whole body; some about her legs, under her arms, and upon her nipples, ulcerated.

Twins, which she brought forth at eight months, in March, 1782, at the time the bubo was healing, had blotches upon them at their birth, and died soon after.

Another girl, about two years old, whom she suckled, was also covered with blotches when she came to the hospital.

To ascertain whether her secondary ulcers were infectious, that is, whether the matter of them would have the specific effects of venereal matter, she was inoculated with some matter from one of her own ulcers, and with some matter from a bubo of another person where mercury had not been used. This was done September 18, 1782. September 19, the puncture where she was inoculated with her own matter gave her pain three hours from the time of inoculation, and the day following inflamed a little. The other had not then inflamed at all.

September 20, both the punctures had suppurated, and had the appearance of a smallpox pustule; they spread considerably, and were attended with much inflammation. That from her own matter healed with common poultices, and ointments without mercury; but the other, although treated in a similar way, continued in the same state, attended with much pain and inflammation.

September 22, the child was inoculated with some matter from one of its own ulcers, and with some common pus. The punctures both inflamed in a small degree, but neither of them suppurated.

The mother and the child went into the ward appropriated to salivation, October 21, 1782. The child took no mercury. It was supposed that its gums became a little sore; and the blotches got well.

During the time that the mother was using mercury the ulcer from inoculation began to get well, and her venereal symptoms disappeared.

What shall we say of this case? Were the blotches venereal? There was every leading circumstance to make us think so, and our opinion was strengthened by the method of cure. If they were venereal, my opinion, that the constitutional appearances of the disease do not produce matter of the same species that produce them, is confirmed. If they were not venereal, then we have no absolute rule by which to judge in such cases.

It has been supposed, and asserted from observation, that ulcers in the mouths of children from a constitutional disease, which constitutional disease has been supposed to be derived from the parent, have produced the same disease upon the nipples of women who had been sucked by them; that is, the children were contaminated either by their mothers or fathers having the disease in form of a lues venerea, of which I have endeavored to show the impossibility. If, however, it were possible to contaminate once in this way, it would be possible to contaminate forever.¹

How far the observations, upon which the before-mentioned opinion is founded, have been made with sufficient accuracy to overturn those which I made with a view to ascertain the truth, I know not. But from a more accurate investigation of some of those cases, which were by most of the faculty called venereal, they appeared evidently not to be such. To say what they were would lead us into the consideration of other diseases. The following case may lessen our faith in the histories of such as have been supposed to be venereal.

Before I describe the case, I shall first mention some of the circumstances leading to it.

A child was supposed to have infected its nurse with the venereal disease. The parents had been married about twelve years when this child was born. The father was a very fond husband, and the mother a mild and most affectionate woman. The father had a venereal gonorrhoea two years before he married, that is, fourteen years before the birth of the child. About nine months after marriage they had a child, and afterwards a second, both of whom were extremely healthy at birth, and still continue so. The mother fell into a weakly state of health, and miscarried of her third child at the end of five months. The fourth child was born at seven months, but was puny, weak, and had hardly any cuticle when born. It was immediately after birth attacked with a violent dysentery. It died in a few days and was opened by me. The whole skin was almost one excoriated surface. The intestines were much inflamed and thickened.

With her fifth child, from great care, she went eight months, and it was now hoped that she might go the full time, and also that this child might be more healthy than the former. When she was delivered, the child was very thin, but free from any visible disease.

Some days after birth, it became blistered in a vast number of places on its body, which blisters were filled with a kind of matter, and, when they broke, discharged a thinnish pus. The inside of the mouth was in the same condition. Bark was given to the nurse. Bark, in

¹ See observations on this subject in notes to Part VII.

milk, was given to the child by the mouth, and it was fomented with a decoction of bark, but in about three weeks after birth it died.

Some weeks after the death of the child, the nurse's nipple, and the ring round the nipple, inflamed, and sores or ulcers were formed with a circumscribed base.¹ They were poulticed, but without benefit. She also complained of a sore throat, but the sensation she complained of was so low in the throat that no disease could be seen. A swelling took place in the glands of the armpit, but they did not suppurate. She applied to a physician, and according to the account which she gave, he pronounced that her disease was venereal, and that she had given suck to a *foul* child; and he ordered ten boxes of mercurial ointment to be rubbed in on her legs and thighs, eight of which had been used when I saw her, and then her mouth had become extremely sore.

These circumstances, came to the ears of the family, and an alarm took place. The husband went from surgeon to surgeon, and from physician to physician, to learn if it were possible for him to have the disease for fourteen years, and never to have perceived a single symptom of it in all that time; or if it was possible he could get children with the disease now, when the two first were healthy. He also wanted to know if it was possible for his wife to have caught the disease from him under such circumstances, and also, if she could breed children with this disease, although she herself never had a single symptom of it. If we take all the above-mentioned circumstances as facts, the conclusion is, that it was impossible there could be anything venereal in the case; but as they could not be absolutely proved to be facts, there must remain a doubt in the mind, a something still to be proved.

Now let us consider the result of the case. The nurse's mouth was become extremely sore from the mercury when I first saw her. I desired that Mr. Pott might see her along with me; and it was the opinion of us both that the sores on the nipple and around it were not venereal; but it was alleged that, as she had taken mercury, their not having a venereal appearance now was owing to that cause. The bark was given, as also the sarsaparilla, but the sores did not heal, nor did they become worse; nor was the mouth better by leaving off the mercury. I ordered the hemlock, but that appeared to have no effect. In the mean time, eruptions broke out on the skin. The skin of the hands and fingers peeled off; the nails of both fingers and toes separated, and sores formed about their roots, which were all supposed (by many) to be venereal. But some of them appearing while the constitution was full of mercury, and others disappearing without any farther use of that medicine, I judged that they were not venereal. We suspected that her mode of living was such as contributed greatly to the continuance of her first complaint, and gave rise to the new ones; for she looked dejected and sallow. She was desired to go into a hospital, which she did. As soon as she got into a warm bed, and had good wholesome food, she began to mend, and in about five or six weeks she had become fat and almost well; the sore only about the

¹ She had but one breast that gave milk.

root of the nail of the great toe had not healed; but that appeared now to be owing to the root of the nail being detached, therefore acting as an extraneous body. She came out of the hospital before this toe had got well, and returning to her old poor mode of living, she had a return of the soreness in the mouth; however, she mended at last without the use of more mercury.

This case I shall farther consider when on diseases resembling the venereal.

The following case will farther prove that we often suspect complaints to be venereal when they really are not.

A gentleman had for some time blotches on his skin. The face, arms, legs, and thighs were in many places covered with them, and they were in their different stages of violence. In this situation he applied to me, and I must own they had a very suspicious appearance. I asked him what he supposed these blotches were; he said he supposed them to be venereal. I asked him when he had a recent venereal complaint; he told me for above twelve months. I then asked him how long he had had the blotches; and the answer was, above six months. As this was a sufficient time for making observations upon them that might ascertain better than the mere appearance what they were, I asked him if any of the blotches that came first had disappeared in that time, and he said many; I desired to see where those had been, and on examination I found only a discolored skin, common to the healing of superficial sores. I then declared to him that they were not venereal, for if they had arisen from that source none of them would have disappeared. He now informed me that he had been taking mercury; and this information obliged me to have recourse to farther inquiries; and I therefore asked him whether, while he was taking mercury, many of the first got well? The answer was, yes. And was the cure of those imputed to mercury? The answer was again in the affirmative. I then asked him if, while he was taking the mercury, which appeared to have cured some, those that now remained arose? Yes. My next question was, how long had he taken mercury? He said for six months. I then declared that they were not, nor ever had been, venereal. I asked him, what was now the opinion of his surgeon? He said, that his opinion still was that they were venereal, and that he should go on with the mercury. I advised him to take no medicines whatever; to live well, avoiding excess, and to come to me in three weeks; which he did, and then he was perfectly well, only the skin was stained where the blotches had been. He now asked me what he was next to do? I told him he might go to the sea and bathe for a month. This he did, and returned well and healthy, and has continued so.¹

[RICORD.—My numerous experiments have confirmed those of Hunter, as may be seen from the preceding notes. The pus of secondary

¹ Added: "The impropriety of giving mercury where the case is not venereal, to indulge the wishes of the patient, is obvious, since it is confirming his suspicions, injuring his constitution, and, when the medicine fails, making him believe himself incurable, since the symptoms have not yielded to the only medicine capable, in his opinion, of removing them."—HOME.

symptoms is not inoculable. I have often met with persons, having at the same time secondary ulcers, a gonorrhœa without a urethral chancre, and a progressing chancre on some other region; and whilst the secondary ulcers and the gonorrhœa gave negative results on inoculation, pus from the chancre produced the characteristic pustule which Hunter so well observed.

Under the influence of the general state of the system, indolent glandular swellings are sometimes met with at the same time as early secondary symptoms; but whilst we always see a ganglionic engorgement succeed an indurated chancre, here, on the contrary, it may appear before, and never in any case occurs with the late symptoms.

When we are aware of the facility with which primary ulcers are reproduced at various points, from the virulent pus flowing over the surface, or being conveyed by the nails in scratching the parts, we can easily account for a large number of reputed secondary symptoms, which, arising in this way, of course furnish inoculable pus. This takes place especially in children, and more commonly than is supposed, and it explains certain cases in which they communicate syphilis to their nurses. Recollect, also, that in young children, primary symptoms are more rapidly followed by secondary than in adults, and that they soon undergo a transformation *in situ*, which gives them the appearance of mucous tubercles; chancres of the breasts in nurses also rapidly assume this appearance. Thus, we have a rational explanation of very many cases which are inexplicable if we do not understand how to analyze them, and allow ourselves to be imposed upon by diseases in children, entirely foreign to syphilis, or irritated fissures of the breast in nurses, which may even excite swelling of the axillary ganglia; not to mention cases where both nurse and child have been previously infected and afterwards accuse each other.—RICORD.]

§ 3. *Of the Local Effects arising from the Constitution considered as critical.—Symptomatic Fever.*

How far the eruptions or local effects of this disease, arising from the constitution, are an effort of nature to clear herself of this disease is not certain. I observed that a gonorrhœa might be produced by a general law in the animal economy, by which it endeavors to relieve itself of the irritation by producing a discharge; and that in chancres a breach is made in the solids for the same purpose, although this purpose is not answered in either, nature not having a provision against this poison. But how far a similar attempt takes place in a lues venerea, I do not know; and if it was upon the same principle, the same reason might be expected to be given why the constitution is not capable of relieving itself in the present instance that I gave when treating of the primary affections, because in this, as it was in the other, the matter formed might be supposed to be venereal; and therefore by being absorbed by the very surface which produced it as in a chancre, it might keep up the constitutional disease. If this were really the case, it would be very different from many other specific diseases; for the reason why many specific diseases cure themselves is that the irritation cannot last be-

yond a stated time; and also that in many the patient is never susceptible of the same disease a second time, as in the smallpox. If this was not the case, a person once having the smallpox would always have them; for according to one supposition, that absorption of its own pus keeps up the disease; and according to another, that the irritation never wears itself out, the patient would either never be free, or have them repeated forever; for his own matter would give the disease a second time, a third time, and so on.¹ But the venereal matter, when taken into the constitution, produces an irritation which is capable of being continued independent of a continuance of absorption; and the constitution has no power of relief, therefore a lues venerea continues to increase. This circumstance is perhaps one of the best distinguishing marks of the lues venerea, for in its ulcers and blotches it is often imitated by other diseases, which not having this property will therefore heal and break out again in some other part. Diseases in which this happens show themselves not to be venereal. However, we are not to conclude, because they do not heal of themselves and give way only to mercury, that therefore they are not venereal, although this circumstance joined to others gives a strong suspicion of their being such.²

When the parts are contaminated by the venereal poison, we commonly find fever, restlessness, or want of sleep, and often headache; but I believe that these symptoms are rather peculiar to the disease, when the second order of parts, the periosteum and bones, are affected, although they are sometimes found from the first. Do these symptoms arise from the local irritations affecting the constitution? And are they merely sympathetic? Whatever the immediate cause may be, they never go off till the local irritations are removed. This fever at first has much the appearance of the rheumatic fever; and after a time it partakes a good deal of the nature of the hectic.

The symptoms often take place independent of, or unattended by, any local action; and when that is the case it becomes very uncertain what the disease is; for, in cases not admitting of clear proof, we must rest on the concurrence of circumstances. Many of these symptoms give way to mercury. This is probably the only concurring circumstance attending this complaint that is any proof of its being venereal.³ It rather, however, appears to militate against this idea that, for the most part, a much smaller quantity is sufficient for the cure of such symptoms than what is necessary for the cure of local complaints. But if mercury always cured them, it would not be very material what they are called. It is worthy of consideration, however, how far the

¹ This circumstance alone is a strong proof that people cannot have the smallpox twice, at least at any distance of time between, if they had fair eruptions the first time; for if the constitution was not so altered as not to be susceptible of this irritation a second time, a person would have them immediately upon the going off of the first.

² It is an established fact that secondary symptoms can not only be cured by other means than mercury, but that they often disappear of themselves in one part of the body to reappear in another; and that, too, repeatedly and for an indefinite period.—RICORD.

³ Here it is to be understood that the circumstance of a previous gonorrhœa or chancre is not to be considered as strong evidence.

venereal poison, when in the constitution, does or does not always produce local effects. That it in general does we are certain; but whether it is ever a cause of constitutional symptoms simply, such as loss of appetite, wasting, debility, want of sleep, and fever, at last becoming hectic, is uncertain; and it is also uncertain whether it is ever capable of producing local actions from irritation only, without an alteration of the structure of the parts irritated, as cough, secretion from the lungs, purging, headache, sickness, pain in different parts of the body, like rheumatic pains, but not from an alteration of the structure of the part taking place, as beginning nodes. If such effects take place, we must, in such a case rely entirely on the history of the disease, and pronounce according to probability. Such complaints come oftener under the management of the physician than the surgeon, to whom I would recommend a particular attention to this.

The fever in consequence of the venereal irritation, like most other fevers, deranges the constitution, which thereupon suffers agreeably to its natural tendency. It is capable of producing glandular swellings in many parts of the body, and probably many of the nodes that arise in the time of this fever may proceed from the fever; and similar to every such effect, from whatever cause, it does not partake of the disease which produced it, for it is not venereal; it only takes place in constitutions very susceptible of such action where the predisposing cause is strong, and probably at seasons most fitted to produce it, only waiting the immediate cause to put them into action. Such will and do go away of themselves, when the predisposing cause ceases, such as season.¹

§ 4. *Of the Local and Constitutional Forms of the Disease never interfering with one another.*

I observed, when treating of the gonorrhœa and chancre, that when occurring in the same person, that one neither increases the symptoms nor retards the cure of the other. And it may also be observed that the chancre or gonorrhœa, and the constitutional form of the disease, meeting in the same person, do not interfere with each other, either in their symptoms or cure.

To explain these effects more fully, let me observe that, if a man has a gonorrhœa, and a chancre appears some days after, the chancre does not either increase or diminish the gonorrhœa. Again, if a man has either a gonorrhœa, a chancre, or both, and a lues venerea ensue in consequence of either of these, neither the gonorrhœa nor chancre is affected by it. If a man has a lues venerea, and gets either a gonorrhœa or chancre, or both, neither of them affects the lues venerea, nor are their symptoms the worse. Nor is the cure of either, singly, retarded by the presence of the other; for a gonorrhœa is as easily cured when there are chancres, as when there are none, even although

¹ Here, in what he calls the general or sympathetic symptoms, Hunter sometimes takes the effect for the cause, as in what he says of nodes. In fact, in the regular succession of syphilitic phenomena, nodes are more frequently developed without than with fever.—RICORD.

the chancres are not attempted to be cured; and a chancre may be cured locally, independent of the gonorrhœa. Farther, a gonorrhœa, chancre, or both, may be as easily cured when the constitution is poxed either by them, or previous to their appearance, as when the person is in perfect health; but the chancre has this advantage: that the constitution cannot be cured without its being likewise cured.

The gonorrhœa and chancre, indeed, so far influence one another as the one can be in some degree a cause of prevention of the other, as has been already observed; but I believe that this circumstance does not assist in the cure of either; yet I could conceive it might, each acting as a derivator to the other, without increasing its own specific mode of action.

§ 5. *Of the supposed Termination of the Lues Venerea in other Diseases.*

This disease seldom or never interferes with other disorders, or runs into, or terminates in any other, although it has been very much accused of doing so; for a termination of one disease in another, as I understand the expression, must always be a cure of the one terminated; but the venereal disease never terminates till the proper remedy is applied, and, therefore, never can run into any other disease.

That venereal complaints can be the cause of others I think is very probable. I have seen a chancre the immediate cause of an erysipelatous inflammation, but the venereal malady did not terminate in the erysipelatous inflammation; for if it had, the chancre would have been cured; nor was the erysipelatous inflammation venereal; the chancre only acted here as a common irritator, independently of the specific quality of the disease as a cause. I have known a venereal bubo become a scrofulous sore as soon as the venereal poison was destroyed by mercury; this was not a venereal terminating in a scrofulous affection, for in such a view the scrofula must have cured the venereal. The venereal disease would seem only to partake of the nature of such disorders as the constitution was previously disposed to, and may excite into action the causes of these disorders. The same observation and mode of reasoning hold equally good with respect to other diseases. The common symptoms, however, of the lues venerea, though in some degree according to the constitution, are not so much so as either in the chancre or the gonorrhœa; for the lues venerea is attended with very little inflammation, which in general partakes much more of the nature of the constitution than any other diseased action.

§ 6. *Of the Specific Distance of the Venereal Inflammation.*

I have already observed that many specific diseases, as also those arising from poison, have their local effects confined to certain distances, which I have called their local specific distance; and it would appear, from observation, that the venereal irritation and inflammation, of whatever kind it may be, is guided by this principle; for it seldom extends far beyond the surface that receives it; the neighboring part not

having a tendency to sympathize or run easily into this kind of inflammation. This is the reason why we find a gonorrhœa for weeks confined to one spot in the urethra in men, and for months to the vagina in women, not extending farther in either. In chancres also the inflammation is confined to the seat of the sore without becoming so diffused as when from common accidents. As a farther proof of this fact, we find it is also confined to the glands in the groin, in cases of buboes, till matter is formed in them; which matter acts as a common irritator, and the specific is in some degree lost, and then the inflammation becomes somewhat more diffused, as it happens in common inflammation. We also see that the same thing happens in venereal ulcers when they arise from the constitution; their size is at first but small, and they are merely local; but as the disease increases the size increases, but they still remain circumscribed, not becoming diffused. Perhaps all poisons and specific diseases agree in this property of having their inflammation limited and circumscribed in a manner peculiar to themselves; for we find that the inflammation of the small-pox, measles, and chicken-pox, is each circumscribed in its own way. From hence it must appear that the human body in general is not so susceptible of specific irritations as it is of the common, or what may be called the natural. But we must also consider that the common inflammation in very healthy constitutions has its specific distance, although not so determined or circumscribed as is that of the specific in such constitutions; therefore, we may reasonably suppose that such healthy constitutions are the farthest in disposition from the inflammatory action; and we may also suppose still more so from the specific. What would appear to strengthen this idea is, that when the constitution is such as readily goes into inflammation, the more readily does the inflammation spread, every part being susceptible of such action; and we find that in many the specific also spreads, although not in so great a degree, from which we may suppose that the specific is always a more confined mode of action. I have suspected that when the body was disposed to increase the inflammation beyond the specific distance, it was of the erysipelatous kind, as was mentioned before, and which is to be attended to in the cure.

§ 7. *Of the Parts most susceptible of the Lues Venerea—of the Time and Manner in which they are affected.—What is meant by Contamination, Disposition, and Action.—Summary of the Doctrine.*

When I assigned the causes for so great a difference in the effects of the same poison upon two different surfaces, as forming the gonorrhœa and chancre, I then said I did not know whether similar surfaces in every part of the body were equally susceptible of this irritation, having but few comparative trials of the direct application of the poison to other parts besides those of generation. But it would appear that some parts of the body are much less susceptible of the lues venerea than others; and not only so, but many parts, so far as we know, are not susceptible of it at all. For we have not yet had every part of the body affected: we have not seen the brain affected, the heart, stomach, liver,

kidneys, nor other viscera, although such cases are described in authors.¹ But as there are different orders of parts respecting the times of the disease appearing, and as the person commonly flies to relief upon the first or second appearances, it may be supposed that the whole disease in the parts actually affected is cured before the other parts have had time to come into action, which will therefore be cured under the state of a disposition only, if we can conceive that a cure can take place before the parts have come into action. But if the parts visibly affected are cured, while those only disposed are not, and afterwards come into action, they would form a second order respecting time; and if these again are cured, and other parts under a disposition should come into action, such would form a third order of parts respecting time. The lungs have been believed to have been affected with the venereal disease, both from the circumstances preceding the complaint, and from the complaint itself being cured by mercury; and their being affected, when the other viscera are not, may arise from their being in some degree an external surface, as will be explained hereafter.

It is this form of the disease, therefore, that gives us the comparative susceptibility of parts both for disposition and action. For we must suppose that all parts are equally and at once exposed to the action of the poison; but though there may be various degrees of susceptibility, it will be sufficient for practice to divide them into two, under the following appellations of *first in order*, and *second in order*, to which we may add the intermediate.

Whether the parts that are really first affected are naturally more easily affected by this kind of irritation, or that some other circumstance which belongs to these parts is the cause, cannot be absolutely determined; but, the matter being attentively considered, it would appear to be owing to something foreign to the constitution, and also not depending on the nature of the parts themselves; for if we take a view of all the parts that are first affected by this disease, when arising from the constitution, which I shall suppose are the parts most susceptible of it, we shall see that, in the recent state of the disease, the parts are subject to one general affection, while there are similar parts of the body not affected by this disease, and not subject to this general affection. Probably the parts second in order may naturally be as susceptible of the irritation as those first in order; but not being under the influence of an irritating cause, they are later in coming into action; and there are also probably other causes in the nature of the parts themselves, such as being indolent in all their actions, and of course indolent in this, therefore later in coming into action. However, it is not universally the case that the parts which I have called first in order are always so; on the contrary, we find that this order is inverted in some cases, although but rarely. We cannot suppose that this difference arises from any active power in the poison, nor any particular direction of it, but from properties in the parts themselves; for it may be allowed us to suppose that, when this matter has got into the circulation, it acts on all parts of the body with equal force;

¹ See page 37.

that is, it is not determined to any one part more than another by any general or particular power in the animal machine; nor is the nature of the poison such as will fall more readily on one part of the body than another when they are all in similar circumstances. That some parts, therefore, are more readily affected by it than others, owing to circumstances which are no part of the animal principle, nor of the poison; and also, that some parts of the body have a greater tendency to be irritated by it than others, must be allowed.

The parts that are affected by this form of the disease when in its early stage or appearance, which I have called first in order, are the skin, tonsils, nose, throat, inside of the mouth, and sometimes the tongue.¹ When in its later state, the periosteum, fasciæ, and bones come into action, and these I call *second in order of parts*. Perhaps the bones come into action from the membrane being affected.

That we may be able to account in some measure for these similar effects as to time in dissimilar parts, such as the skin and the tonsils, two very different kinds of parts, let us consider in what circumstance they agree, and why they are more susceptible of this irritation than those parts that probably are naturally as much so, although they do not receive it so readily, such as the periosteum, fasciæ, and bones.

The most remarkable circumstance, perhaps, to which the external surface is exposed, and to which the internal is not, is cold, or a succession of different degrees of cold. For we observe, in general, that the atmosphere in which we live is colder than the human body² in its usual temperature; therefore the skin, &c., is continually exposed to a cold greater than what the internal parts are; and we find that all those parts which are most exposed to this admit of being much more easily affected, or come more readily into action in this disease than the others.

It is certain that cold has very powerful effects on the animal economy. It would at least appear to have great powers of disposing the body for receiving the venereal irritation, and going readily on with it.

From this idea we may account for several circumstances respecting this disease, as the mouth, nose, and skin, being the most frequently affected, since they are rendered most susceptible of it from the causes before mentioned, and for the same reason come very readily into action. If this be a true solution, it also accounts for those second in order being affected; for if the poison has contaminated parts which are both first in order of susceptibility and time of coming into action, it is natural to suppose that those parts which are most predisposed, as the external surfaces, shall come first into action; the parts exposed to cold, in the next degree, forming the second in order, come next

¹ The tongue is very subject to have ulcers formed on it, especially on its edges. They are seldom very large, nor are they often either very foul or have a hard basis; these are commonly supposed to be venereal; but I believe they seldom are. I do not know whether I am or not acquainted with the distinguishing marks. I never saw but one that I suspected to be either venereal or cancerous from its foul look and its hard basis. It gave way readily to mercury, therefore I supposed it to be venereal.

² It is to be understood that this cannot hold good as a universal principle; it can only take place in the temperate and frigid zone; for in the torrid, the heat of the surrounding atmosphere is sometimes greater than that of the human body.

into action, such as bones, periosteum, &c., but even in them it is not in every bone alike, or every part alike of any one bone, for it appears first in those that are in some measure within the power of being affected by sympathy from application of cold to the skin; we find that when the deeper-seated parts, or the parts second in order, come into action, such as the periosteum or bones, it is first in these that are nearest the external surface of the body, such as the periosteum or bones of the head, the tibia, ulna, bones of the nose, &c., nor does it affect these bones on all sides equally, but first on that side next the external surface. However, it would appear that in the bones there is another cause, besides the vicissitudes of weather, why this disease should attack them; for the periosteum of bones, or bones themselves, are not liable to be diseased on all parts in proportion to the distance from the skin, the periosteum which covers the ankles, or many of the joints, being as near the external surface as many other parts of the periosteum or bones that are affected. The nature of the bones themselves, which are covered by that periosteum, is somewhat different; they are softer in their texture, therefore they would seem to be affected in proportion to their nearness to the skin and hardness of the bones jointly, which would incline us to believe that the bones are more easily affected, and rather have some influence upon the periosteum in this disease than the periosteum upon them; and this susceptibility in the hard bones would appear to be in proportion to their quantity of earth and exposure to cold combined.

It may be objected to this theory, that the fore part of the tibia, &c., cannot be really colder than the back part; but, then, it may be supposed that it is not necessary that the part should be actually cold, but only within the power of sympathy. For a part that is not actually cold is capable of being affected, from its sympathizing with a cold part in the same manner as if actually cold, although, perhaps, not in so great a degree, and therefore requires a longer time to come into action than if it were actually cold. We find, for example, that when the skin is actually cold, the muscles underneath are thrown into alternate action, so that we tremble, or our teeth chatter with cold, and yet it is possible that these muscles may not be colder at this time than any other; although it is most probable that they are really colder,¹ which will assist the power of sympathy. So far as cold can affect the actions of parts, so far, also, will the sympathizing part be affected in proportion as it is nearer to the parts actually cold; therefore, the deeper-seated parts in the venereal disease are later in coming into action.

The actual cold parts come first into action, then those that are less so, and next, those that are nearest in sympathy, and so on, except the parts first in order of susceptibility have been only partially cured, and then their recurrence may correspond with the action of those that are second in order of susceptibility, and all the parts will come into action together. What would seem to strengthen this opinion, is the different effects that arise from different climates—in warm climates, the disease seldom or never arises to such a height as in cold climates; it is more

¹ See Philosophical Transactions, vol. 68, part i. page 7.

slow in its progress, and much more easy to cure, at least if we may give credit to the accounts we have received of the disease in such climates.

Whether the difference in the time of appearance between the superficial and deeper-seated parts in warm climates is the same as in cold ones, I do not know; but, from the above theory, it should not be so great in the warm as in the cold climates.

Besides the causes already mentioned, it would appear that there are others by which the lues venerea may be brought sooner into action than it otherwise would be, if left entirely to the nature of the constitution; for I think I have seen cases where fever has brought it into action, when the disposition had been previously formed. Like most other diseases to which there is a susceptibility or disposition, we find that any disturbance in the constitution shall call it forth—scrofula, gout, and rheumatism are often called forth in this way.

Having said, that the deeper-seated parts of the body come into action later than those that are superficial, I shall now observe, that when the lues venerea has been cured so far as only to remove the first actions, but not to eradicate the disposition in the deeper-seated parts, as has been explained, under such circumstances of the disease it never attacks again the external, or the parts that were first affected, but only the deeper-seated parts, which are second in order of time. The reason is, that the deeper-seated parts had not been affected at the time of the cure of the first. The following cases, selected from a great number of similar ones, will illustrate the doctrines we have laid down.

In January, 1781, A. B. had connection with a woman, and two days after perceived an itching in the glans; at the end of four days he found chancres upon the prepuce. He took about twenty grains of calomel, and then applied to a surgeon, under whose care he remained three months, that is, till April. He thought himself nearly well, and went into the country, taking a few pills with him, and at the end of another month believed himself perfectly cured. Three months after, that is, in August, he caught cold, and had considerable fever, for which James's powders were given. Soon after this, spots of a copper-color appeared upon his legs, and he had violent pains in his shin bones. By the order of a country surgeon, he rubbed in about an ounce of mercurial ointment, and had a slight spitting; the pain ceased, the spots disappeared, and in a month he again conceived himself to be well. This was in October, 1781. In June, 1782, he had the influenza; about a fortnight afterwards his left eye inflamed, and he had a pain in the head, and a noise in his ears. Five days afterwards his throat became sore. Three weeks after the inflammation of his eye, several pustules made their appearance near the anus. These symptoms remained till the 21st of August, when he came into St. George's Hospital. He rubbed in strong mercurial ointment till his mouth became sore; he sweated very much; the pain in his head remained; but the complaint in his eye, and about the anus, together with the sore throat, were totally removed.

It appears that in this case some additional power was required to dispose the body more readily to exhibit venereal symptoms. That

cold has a strong power of this kind we have allowed, which appears in this case to have been the first immediate cause; but a fever seems to have been equally effectual in producing the second return of the symptoms.

Here was the venereal disposition in the constitution from April, 1781, the time he was cured of the local complaint, till June, 1782, fourteen months after; and then it reappeared eleven months after that, which periods might have been longer, if it had not been called forth by the two circumstances of cold and fever.

Let us consider how far this case corresponds with the opinion of the action being easier of cure than the disposition. The first action, that is, the chancres, were perfectly cured by the quantity of mercury he took at first, for they never recurred; but the venereal matter had produced the disposition in the constitution, which was not cured by the same quantity of mercury, for blotches appeared three months after; but all the parts that had taken on the disposition at that time had not then come into action, therefore only the parts which had come into action were cured by the second course of mercury, and the other parts which had not yet taken on the action went on with the disposition till the influenza (which happened eleven months after) brought them into action. The first class of pocky appearances were perfectly cured by the second course of mercury, as the local had been cured by the first, for they never reappeared, not even with the second. The second set of pocky symptoms, we have observed, appeared to be perfectly cured by the third course of mercury. How far there may be a third set of pocky symptoms to come forth, time can only tell.

This case farther proves, that sometimes the second set of symptoms appear first, and the first second; and also shows the difference in times between the first pocky appearances after the healing of the local, and between the second appearance of the symptoms after the healing of the first.

A gentleman had a chancre in May, 1781; in the same month of the next year, 1782, he had a gonorrhœa; and in May, 1783, he had a sore throat. He had no connection with any woman from September, 1782, till May, 1783, which was about a fortnight before his throat became sore, and had had no immediate local complaints.

When I saw the throat first, I said it was not venereal; and he being rather of a hectic habit, was desired to go to Bristol. When at Bristol an ulcer appeared at the root of the uvula, which made him immediately come back to London. When I saw this ulcer, I said it was venereal. He now went through what I supposed was a sufficient course of mercury, and all the venereal symptoms appeared to be cured.¹ He went into the country about the month of August, and about the beginning of January, 1784, viz., four months after the supposed cure, he felt a pain, together with a swelling, in his shin bones, for which he went through a course of mercury, which removed both the pain and the swelling.

¹ I may remark here, that only the venereal ulcer got well by the mercury; for the former excoriation of the throat continued, but was afterwards cured by bark and sarsaparilla.

In this case, we have every reason to suppose that the disposition had taken place in the bones or their coverings, from the same cause that affected the uvula; but the uvula suffered first, being of the first order of parts. Whether this was really the case or not, we must allow that in the parts second in order, the disposition, and not the action, did exist at the time when the disease in the uvula came into action, as also at the time when he went through a course of mercury sufficient to cure the uvula; we must also allow that the disposition was not removed by the quantity of mercury which was capable of removing the disease in the uvula. From all which I would draw the following inferences in confirmation of the preceding doctrine; first, that the parts about the throat are capable of assuming the action sooner than the bones; secondly, it is probable that mercury can cure the action only, and not the disposition; and thirdly, that the venereal pus is not present in the circulation while the secondary actions take place; for if it were, the parts first in order would stand an equal chance of being again contaminated, and of coming into action a second time. Supposing the venereal matter still to exist in the constitution after the parts first thrown into action are absolutely cured, so as to contaminate the parts that are second in order of action, we should certainly have the parts first in order to take on the disease a second and even a third time, and so on, while the second or third in order would be going on and only coming into their first action; and therefore we might have those that are first in order, and those that are second in order, in action at the same time. This might be carried still farther, for as it is possible for the parts first in order of susceptibility to have the disease a second time, while the parts second in order are under the influence of the first infection, those first in order may be contaminated a second time from a new or fresh infection, which would be a lues venerea upon a lues venerea, a case which certainly may happen. If the matter does really continue in the constitution, it would be natural to suppose that the parts most easily affected by it would remain so long as the poison remained. It may indeed be alleged, that parts which have already been accustomed to this irritation, and cured, are rendered by that means less susceptible of it.

If the poison were still capable of circulating after its visible effects were cured, then mercury given in the time of a chancre can be of little service, as it can only assist in the cure of the chancre, but cannot preserve the constitution from infection, which does not agree with experience; for practice informs us that not one in fifty would escape the lues venerea if the chancre were only cured locally; so that mercury has the power of preventing a disposition from forming, and therefore is necessary to be given while we suppose absorption going on, or while there is matter that may be absorbed.

Mercury, prior to the action, will not remove the disposition, and of course will not hinder the action coming on afterwards; however, it is possible, and most probable, that the medicine while it is present will hinder the action taking place; so that no venereal complaints will take place under the course of mercury, although the parts may be contaminated.

This is not peculiar to the venereal disease, but common to many others; and in some it may be reversed, for there are diseases whose disposition can be cured, and therefore the action prevented by such medicines as would rather increase the action if given in the time of it.

The parts first affected are more easily cured, according to our present method, than the parts second in order. A part once perfectly cured is never irritated again by the same stock of infection, though probably some other parts in the constitution are still under the venereal irritation. If the facts stated be just, the circumstance of the disease appearing to leave the parts first attacked, and attacking the secondary parts, is easily accounted for. It is no more than the first parts being cured while the secondary are not, and of course going on with the disease, the first remaining well.

If this mode of accounting for these circumstances be just, it proves two things; first, a former assertion, that this disease, in the form of lues venerea, has not the power of contaminating parts not already under its influence, even in the same constitution; secondly, that the venereal poison is not circulating in the blood all the time the disease is going on in the constitution; so that, most probably, the poison only irritates when just absorbed, and is soon expelled or thrown out in some of the secretions.

The above account of the lues venerea may be reduced to the following heads:—

First, that most parts, if not all, that are affected in the lues venerea, are affected with the venereal irritation at the same time.

Secondly, the parts exposed to cold are the first that admit the venereal action; then the deeper seated parts, according to their susceptibility for such action.

Thirdly, the venereal disposition, when once formed in a part, must necessarily go on to form the venereal action.

Fourthly, that all parts of the body, under such disposition, do not run into action equally fast, some requiring six or eight weeks, others as many months.

Fifthly, in the parts that come first into action, the disease goes on increasing without wearing itself out, while those that are second in time follow the same course.

Sixthly, mercury hinders a disposition from forming, or, in other words, prevents contamination.

Seventhly, mercury does not destroy a disposition already formed.

Eighthly, mercury hinders the action from taking place, although the disposition be formed.

Ninthly, mercury cures the action.

These principles being established, the facts respecting the cure are easily accounted for.

CHAPTER II.

OF THE SYMPTOMS OF THE LUES VENEREA.

WHEN the venereal matter has affected the constitution in any of the ways before mentioned, it has the whole body to work upon, and shows itself in a variety of shapes; many of which putting on the appearance of a different disease, we are often obliged to have recourse to the preceding history of the case before we can form any judgment of it. Probably, the varieties in the appearances may be referred to the three following circumstance: the different kinds of constitutions, the different kinds of solids affected, and the different dispositions which the solids are in at the time; for I can easily conceive that a peculiarity of constitution may make a very material difference in the appearance of the same specific complaint; and I am certain that the solids, according to their different natures, produce a very different appearance when attacked with this disease; and I can also easily conceive that a different disposition from the common in the solids at the time may make a considerable difference in the appearances.

The difference of constitution, and of the same parts at different times, may have considerable effects in the disease with respect to its appearing sooner or later. This I am certain of, that the different parts of the body produce a very considerable difference in the times of appearance of this disease. That it appears much sooner in some parts than in others, is best seen where different parts are affected in the same person; for I have already endeavored to show that it is most probable that all the parts affected are contaminated nearly at the same time. This difference in the times is either owing to some parts being naturally put into action more easily by the poison than others, or they are naturally more active in themselves, and therefore, probably, will admit more quickly the action of every disease that is capable of affecting them.

When on the general history of the lues venerea, I divided the parts into two orders, according to the time of their appearance. I also observed that the first were commonly the external parts, as the skin, nose, tonsils; and that the second were more internal, as the bones, periosteum, fasciæ, and tendons.

The time necessary for its appearance, or for producing its local effects in the several parts of the body most readily affected, after it has got into the constitution, is uncertain, but in general it is about six weeks; in many cases, however, it is much later, and in others much sooner. In some cases, it appears to produce its local effects within a fortnight after the possibility of the absorption of the matter. In one case a gentleman had a chancre, and a swelling in the groin came on,

and within the before-mentioned time he had venereal eruptions all over the body. He could not impute this to any former complaint, yet there is a possibility of its having arisen from the first mode of catching the disease, by simple contact, at the time he got the local infection or chancre, which might extend the time to a week or more, although this is not probable. In another case, three weeks after the healing of a chancre, eruptions broke out all over the body, and this happened only a fortnight after leaving off the course of mercury that cured the chancre. The effects on other parts of the body, that are less susceptible of this irritation, or are slower in their action, are of course much later in appearing; and, in those cases where both orders of parts are contaminated, it is in general not till after the first has made its appearance for a considerable time, and even, perhaps, after it has been cured; for while the parts first in order of action were contaminated and under cure, the second in order are only in a state of contamination, and go on with the disease afterwards, although it may never again appear in the first.

From this circumstance of the parts second in order coming later into action we can plainly see the reason why it shall appear in them, although the first in order may have been cured; for if the external parts, or first in order, have been cured, and the internal, or second, such as the tendons, bones, periosteum, &c., have not been cured, then it becomes confined solely to these parts. The order of parts may sometimes be inverted; for I have seen cases where the periosteum, or bone, was affected prior to any other part. Whether in the same case it might in the end have affected the skin or throat I will not pretend to say, as it was not allowed to go on; but it is possible that the second order of parts may be affected without the first having ever been contaminated.

Its effects on the deeper-seated parts are not like those produced in the external, and the difference is so remarkable as to give the appearance of another disease; and a person accustomed to see it in the first parts only would be entirely at a loss about the second.

The parts which come first into action go on with it, probably on the same principle, much quicker than the others; and this arises from the nature of the parts, as has already been observed.

Each succeeding part that becomes affected is slower and slower in its progress, and more fixed in its symptoms when produced; this arises also from the natural disposition of such parts, all their actions being slow, which indolent action may be assisted by the absence of the great disposing cause, that is, cold. I should, however, suspect that warmth does not contribute much to their indolence of action; for if it did it would assist in the cure, which it appears not to do, these parts being as slow in their operations of restoration as they are in their actions of disease. We may also observe that similar parts come sooner into action, and appear to go on more rapidly with it, as they are nearer the source of the circulation. It appears earlier on the face, head, shoulders, and breast than on the legs, and the eruptions come sooner to suppuration in the before-mentioned parts.¹

¹ See Introduction.

The circumstance of its being very late in appearing in some parts, when it had been only cured in its first appearances, as mentioned, has made many suppose that the poison lurked somewhere in the solids; and others that it kept circulating in the blood for years.

It is not, however, easy to determine this point; but there can be no good reason for the first hypothesis, as the lurking disposition never takes place prior to its first appearance; for instance, we never find that a man had a chancre a twelvemonth ago, and that it broke out after a year in venereal scurfs upon the skin, or ulcers in the throat. The slowness of its progress is only when the parts less susceptible of its irritation have been affected by it.

[RICORD.—It has already been apparent, from the divisions which I admit of syphilitic symptoms into *primary, successive, secondary, and tertiary*, that my views coincide almost entirely with Hunter's. Yet there are some points of difference which I consider important, and to which I would for a moment call the reader's attention. Thus, it appears to me that the order of succession, and the almost undeviating time of appearance of the different groups of syphilitic symptoms, are subject to less variable laws than Hunter seems to think. For example, a primary ulcer is never preceded by secondary symptoms, and still less by tertiary. Yet some apparently contradictory cases seem to militate in favor of Hunter's opinion in opposition to the doctrine which I lay down as absolute. But these cases, if well analyzed, are not contradictory in fact; they are so only in appearance, and simply in consequence of the mode in which they are explained.

When a person contracts a chancre for the first time, which becomes indurated, if no treatment be employed, this chancre may, from its first appearance, give rise to successive symptoms, that is, to other chancres in the neighborhood by direct inoculation, and to primary infection of the lymphatics connected with it, by absorption; it may also be followed by secondary symptoms as early as the third week of its duration, rarely earlier, and more frequently after the sixth week; and, finally, always supposing that the disease be left to itself, tertiary symptoms will be developed generally by the end of six months, seldom earlier and commonly later. Each of these phases which we have described may last a longer or shorter time. The preceding series of symptoms may have disappeared before the succeeding series is developed; or, on the contrary, the primary symptoms may still remain on the appearance of secondary symptoms, or tertiary symptoms supervene during the course of the latter.

It is rare, however, for the primary ulcer to last long enough for tertiary symptoms to be developed.

In the order of cessation, the primary symptoms will generally disappear first; next, the secondary symptoms, and, finally, the tertiary. Yet, as a cure rarely takes place spontaneously, frequent inversions in the above order will occur, depending on the efficacy of treatment, and its seasonable application to one order of symptoms rather than another; thus, secondary symptoms may disappear while the primary ulcer still remains, and tertiary symptoms may yield to treatment which the secondary have resisted. Again, each series of symptoms

may be repeated an indefinite number of times, independently of the preceding or subsequent series. So that one patient will contract a new chancre while he has symptoms of constitutional syphilis, and another repeatedly have secondary symptoms during the continuance or after the disappearance of tertiary; to careless observers, there may thus be an apparent inversion.

But the most fruitful source of error is the effect produced by treatment. Thus, treatment directed against the primary ulcer may entirely anticipate secondary symptoms, or diminish their intensity, modify their form, or retard the time of their appearance.

The same treatment also which modifies the secondary symptoms and keeps them under its influence so long as its action lasts, may not have the least prophylactic effect on the tertiary symptoms, which are then developed during its administration, and may still be followed by secondary symptoms in case the treatment which prevented their appearance be suspended too soon. And, finally, though treatment produces this result more frequently than any other cause, and its influence is more evident and easily recognized, yet if we take the trouble to analyze facts, we shall find that certain casual hygienic circumstances and preceding or concomitant pathological conditions may also have the same effect.

In conclusion, if, to the above, we add those cases in which patients deceive themselves, or intentionally deceive their physicians, and if we lay aside, as should be done at the present day, the apocryphal cases of non-consecutive constitutional syphilis, then the order which we have established in the succession of symptoms and the time of their appearance will remain as a general rule, to which there is, perhaps, no exception that cannot be explained.—RICORD.]

§ 1. *Of the Symptoms of the first stage of the Lues Venerea.*

The first symptoms of the disease, after absorption, appear either on the skin, throat, or mouth. These differ from one another according to the nature of the parts affected. I shall, therefore, divide them into two kinds, although there appears to be no difference in the nature of the disease itself.

The appearance on the skin I shall call the first, although it is not always the first appearance; for that in the throat is often as early a symptom as any. The appearances upon the skin generally show themselves in every part of the body, no part being more susceptible than another, first in discolorations, making the skin appear mottled, many of them disappearing, while others continue and increase with the disease.¹

In others, it will come on in distinct blotches, often not observed till scurfs are forming; at other times, they appear in small distinct inflammations, containing matter, and resembling pimples, but not so pyramidal, nor so red at the base.

Venereal blotches at their first coming out, are often attended with

¹ This is not peculiar to this disease; it often takes place in the smallpox.

inflammation, which gives them a degree of transparency, which I think is generally greater in the summer than in the winter, especially if the patient be kept warm. In a little time this inflammation disappears, and the cuticle peels off in the form of a scurf. This sometimes misleads the patient and the surgeon, who look upon this dying away of the inflammation as a decay of the disease, till a succession of scurfs undeceive them.

These discolorations of the cuticle arise from the venereal irritation, and are seldom to be reckoned a true inflammation, for they seldom have any of its characteristics, such as tumefaction and pain; but this is true only on those parts most exposed, for in parts well covered, and in parts constantly in contact with other parts, there is more of the true inflammatory appearance, especially about the anus.

The appearance of the parts themselves next begins to alter, forming a copper-colored dry inelastic cuticle, called a scurf; this is thrown off, and new ones are formed. These appearances spread to the breadth of a sixpence or shilling, but seldom broader, at least for a considerable time, every succeeding scurf becoming thicker and thicker, till at last it becomes a common scab, and the disposition for the formation of matter takes place in the cutis under the scab, so that at last it turns out a true ulcer, in which state it commonly spreads, although but slowly.

These appearances arise first from the gradual loss of the true sound cuticle, the diseased cutis having lost the disposition to form one; and, as a kind of substitute for this want of cuticle, an exudation takes place, forming a scale, and afterwards becoming thicker, and the matter acquiring more consistence, it at last forms a scab; but before it has arrived at this stage the cutis has given way, and ulcerated, after which the discharge becomes more of a true pus. When it attacks the palms of the hands and the soles of the feet, where the cuticle is thick, a separation of the cuticle takes place, and it peels off; a new one is immediately formed, which also separates, so that a series of new cuticles takes place, from its not so readily forming scurfs as on the common skin. If the disease is confined to those parts it becomes more difficult to determine whether or not it be venereal, for most diseases of the cutis of these parts produce a separation of the cuticle attended with the same appearances in all, and having nothing characteristic of the venereal disease.

Such appearances are peculiar to that part of the common skin of the body which is usually exposed; but when the skin is opposed by another skin which keeps it in some degree more moist, as between the nates, about the anus, or between the scrotum and the thigh, or in the angle between the two thighs, or upon the prolabium of the mouth, and in the armpits, the eruptions never acquire the above-described appearances, and instead of scurfs and scabs we have the skin elevated, or, as it were, tumefied by the extravasated lymph into a white, soft, moist, flat surface, which discharges a white matter. This may perhaps arise from there being more warmth, more perspiration, and less evaporation, as well as from the skin being thinner in such places. What strengthens this idea still more is, that in many venereal patients I

have seen an approach towards such appearances on the common skin of the body; but this has been on such parts as were covered with the clothes, for on those parts of the skin that were not covered there was only the flat scurf; these, however, were redder than the above-described appearances, but hardly so high.

How far this is peculiar to the venereal disease, I know not. It may take place in most scurfy eruptions of the skin. From a supposition of this not being venereal, I have destroyed them at the side of the anus with a caustic, and the patient has got well; however, from my idea of the disease, that every effect from the constitution is truly local, and therefore may be cured locally, a cure effected by this treatment does not determine the question.

This disease, on its first appearance, often attacks that part of the fingers upon which the nail is formed, making that surface red which is seen shining through the nail, and, if allowed to continue, a separation of the nail takes place, similar to the cuticle in the before-described symptoms; but here there cannot be that regular succession of nails as there is of cuticle.

It also attacks the superficies of the body which is covered with hair, producing a separation of the hair. A prevention of the growth of young hair is also the consequence while the disease lasts.

[G. G. B.—The variety of venereal eruptions is so great as almost to baffle description. Hence, pathologists have usually contented themselves with fixing on some one characteristic which was generally applicable, and have neglected any attempt at distinct classification, or more accurate and detailed delineation. Thus, the copper color has been assigned by some, and the circular form by others, as the distinguishing character. Yet these general tests tend only to mislead, since the first is wanting in many species of venereal eruption, and the second is shared also by the great majority of eruptions which are not venereal.

It must be confessed, that in the present state of our knowledge it would be impossible to produce a complete history of every form of venereal eruption. There are many sorts which are so indistinct and uncertain in their character that it would be difficult to find their proper place in any arrangement, and equally difficult to point out any constant and invariable signs by which they may be always identified. Yet the species of eruption which are of most frequent occurrence, and which are in practice of the greatest importance, are sufficiently distinct to admit of classification; and it is obvious that a clear history of the aspect and course of these more common forms of eruption must greatly elucidate the whole subject, and ultimately facilitate the knowledge of those other varieties which are not included in the list.

The mottled state of the skin, to which allusion is made by the author, is certainly found in venereal cases. Yet a similar appearance is often seen in cases where no venereal cause can be assigned; nor does there seem to be any peculiarity by which the one case can be distinguished from the other. It may be doubted whether this mottled color denotes more than an irritability of the skin, and a general disposition to eruptive disorders.

The more distinct sorts of venereal eruption may be divided into the following classes:—

1. *Tubercles*.—The original seat of the tubercle is probably in the sebaceous glands, certainly in some structure which is below the surface of the cutis. This is sufficiently evident from its aspect at the period of its commencement. It appears, in the first instance, as a small hard substance like a pea, which may be felt by the finger before there is sufficient discoloration to attract the notice of the eye. At this period, the eruption is scarcely discernible if the light falls directly on the part, though if it is viewed by a side-light the prominence is sufficient to cast a distinct shadow. However, this stage is of short duration; the inflammation soon reaches the surface, and the spot then wears the appearance of a small red elevation, evenly rounded on the surface. In the next place, the cuticle dies, and becomes detached from the cutis; but it usually remains for a time, forming a horny cap, which covers the surface, and protects the formation of a new cuticle beneath. In this state, it frequently resembles a large vesicle; but the appearance is deceptive. If the dead cuticle be removed by a probe, not a particle of fluid will be found under it.

The tubercle may remain in this state with little change, except that it slightly enlarges, and that successive layers of cuticle desquamate from the surface. But it often happens that it goes on to ulceration. In such cases, the ulcer always commences at a central point, which is slightly depressed, and may be distinctly seen on the first removal of the cuticle, and which appears to be the orifice of the sebaceous duct. As the ulcer proceeds, it usually destroys the centre of the tubercle only, and leaves an indurated and elevated portion, by which it is encircled and separated from the sound skin. In the progress of the ulcer, this tubercular thickening continues to precede it, so that there is always a margin of red induration, more or less marked, as the powers of the system are greater or less; frequently of considerable breadth in those who are strong and vigorous, but in the feeble often so slight as to be scarcely distinguishable; yet in all cases leaving, as it subsides, the peculiar brown stain, which is the chief characteristic of the tubercle.

It is from this stain that the tubercle has received the appellation of the copper blotch. The hue varies with the age and the progress of the eruption. In the earliest stages, it differs in nothing from that of common inflammation, and is effaceable, or nearly so, on pressure. But in a short time a yellow or copper tinge is blended with the florid red, and gives it a peculiar brightness, the cause of which is made evident by passing the finger over the spot. The vessels are thus emptied for the moment, and the florid arterial color disappears; but the yellow or copper stain remains unchanged, and is shown to depend on something which has been effused on the surface, and which cannot be removed by pressure. While the tubercle is stationary the color becomes deeper, and more yellow, but retains much of its brightness; but as the disease is subdued, and as the tubercular thickening subsides under treatment, the copper tinge gradually fades away, and gives place to a dirty brown. Though the hue is changed, the stain

remains equally indelible, even at a time when all elevation has disappeared, and the spot is on the same level with the surrounding skin. There is still a later stage, at which this brown stain gradually fades away, and the seat of the spot is altogether undistinguishable.

This peculiar stain is not found in all forms of venereal eruption; it seems to be confined to the varieties of the tubercle; and there is reason to think that its exact nature and cause might be ascertained if we had a fuller acquaintance with the causes of the general color of the skin, and with the functions of the sebaceous glands.

2. *Lichens*.—This eruption consists of small acuminated pimples, of a red color, which are sometimes evenly scattered over the surface, at other times arranged in patches. It is not correct to characterize this eruption, as has been sometimes done, by the absence of suppuration. Many of the papulæ imperfectly suppurate; that is, a small quantity of opaque serum is effused under the cuticle at the apex, and this serum soon becomes purulent; but the pus never accumulates; in a few days, the greater part is absorbed; the rest dies into a small scab; and when this scab falls off, no ulcer, or depression, or cicatrix, is left behind. The pus is effused from the surface of the cutis, and is altogether unattended by ulceration.

Lichens differ much in the size of the papula and the depth of the color; but they have one character which is very generally present, and which is shared by no other venereal eruption. They tend to pass spontaneously through their successive stages, and then spontaneously to subside. In other venereal eruptions, the course of the disease in the skin is a test of the course of the disease in the general system. A diminution in the eruption argues an improvement in the affection of the constitution. In lichen, on the contrary, the color may fade, and the elevation diminish, at a time when other symptoms are continuing to increase, and even when a fresh crop of lichen is appearing. Hence, the same case frequently presents specimens of every stage of this eruption, from the first rise of the small papula, before maturation has taken place, to the period when all elevation has subsided, and the seat of the spot is marked only by a pale or purple discoloration of the skin, which is effaceable by the pressure of the finger. This progress towards recovery, which often occurs spontaneously, may be very readily produced by remedies which are altogether inadequate to cure the disease, especially if they are exhibited when the eruption has run through its natural periods, or about a fortnight or three weeks from the date of its appearance.

Yet this natural tendency to pass off is subject to exceptions. It sometimes happens that the small papula continues slowly but steadily to enlarge, and at length attains the size, and assumes the copper stain, and all the other characters of the tubercle. A close examination shows the mode in which this change takes place. The lichenous papula is situated on one of those small elevations on the surface of the cutis which mark the orifices of the ducts that perforate the cutis, and proceed to the glands which are situated beneath it. The inflammation, which began on the surface, gradually extends down the duct, and involves the sebaceous gland which is at the bottom. This tuber-

cular lichen is not so much a peculiar form of lichen as an eruption of lichen passing into an eruption of tubercles, by a process which is very easily understood. In such cases, the subsequent course and the treatment are exactly those of the tubercle.

Most forms of lichen present no indelible stain. But where the eruption has been unusually lasting there will be seen, after the subsidence of the papula, a brown stigma, occupying a central point, and commonly presenting an appearance of depression or pitting. This appearance is, however, in almost all cases, delusive. It arises from the stain being situated deep in the substance of the cutis, and shining through the more superficial parts, which are transparent. These stigmata seem to characterize an earlier and more imperfect form of the preceding variety. There has been an attempt to form a tubercle; but the complaint has been arrested before the sebaceous gland has been fully involved.

3. *Psoriasis and Lepra*.—Scaly eruptions are very common in venereal cases; but they differ little from those which occur from other causes. They appear generally in small circular spots, but they vary much in the degree of elevation, the size of the spot, and the depth of the color; yet they never assume the copper tinge of the tubercle. The color is rather sandy, and is in almost all instances nearly effaceable by pressure. The difference of color, the superficial origin of these eruptions, and the total absence of ulceration, in all forms and stages, sufficiently distinguish them from tubercles.

4. *Rupia*.—This eruption shows itself at first by a slight blush on the surface. Generally in a few hours, sometimes at a longer period, the cuticle at this part is elevated into a small blister, by the effusion of opaque serum, which soon becomes purulent, and shortly afterwards concretes into a scab. The disease spreads by a process in all respects similar. Effusion takes place under the cuticle at the edge, and the concretion of this effusion enlarges the diameter of the scab, and elevates it from the surface of the cutis. Hence the scab, as it grows, consists of a series of concentric layers, those towards the apex having been formed at the commencement of the disease, and being consequently small in size; those at the base, which have been formed by the latest effusion, being commensurate with the present size of the sore. The accumulation of the whole forms a cone, which projects like a horn when the extension of the ulcer has been slow; but has a wide base, and comparatively a slight projection, where the ulcer has rapidly enlarged.

That rupia begins on the surface of the cutis is manifest, not only from the course of the ulcer, but also from the aspect of the cicatrix which it leaves. The sore most frequently heals first at the centre, an island of skin forming there while the edges are still stationary, or even spreading; and this is an occurrence which is known to be extremely rare in ulcers which have destroyed the whole substance of the cutis. Again, after the sore has healed, the surface of the cicatrix, especially near the edges, often presents distinctly to the eye the minute points that mark the ducts which perforate the cutis, and which must have been destroyed if the whole thickness of the cutis had been involved.

Some cases of ulcerating tubercles closely resemble rupia; but in rupia there is neither tubercular thickening nor copper stain. When these exist at the edges of the sore, the eruption is not rupia, but tubercle, passing rapidly into ulceration. In such cases, the spots which resemble rupia will generally be found intermixed with distinct tubercles, and the treatment required will be that which is adapted to the tubercle.

All pustular venereal eruptions seem to partake of the characters which belong to rupia, as far as the superficial origin, the mode of extension, and the accumulation of the crust, are concerned; but they differ much in the degree of inflammation which precedes the formation of matter, and the size of the original pustule. In genuine rupia, the vesicle is preceded only by a slight blush of inflammation, and at its first appearance is nearly of the size of a silver penny. But it often happens that the inflamed spot is smaller, and somewhat more elevated, and that the fluid effused is purulent from the first, and forms immediately a small scab at the top of the eminence. Such a spot resembles a common pustule, and the small size of the scab, and the slowness of its progress, give it an appearance which is not readily recognized as that of rupia. Yet it is difficult to point out any essential difference; and if the ulcer be allowed to increase, the aspect in the more advanced stages will be precisely similar. The description, therefore, which has been given may be taken as applicable to pustular venereal eruptions in general, if not in all the minuter details, at least in the prominent and essential characters.

It must not be forgotten that this classification of venereal eruptions is intended to include the principal varieties only, and that other forms of eruption occur which are less frequent and less distinctly marked, but which yet, from the history of the case, and the accompanying symptoms, must be referred to a venereal origin.—G. G. B.]

The second part in which it appears is most commonly the throat, sometimes the mouth and tongue. In the throat, tonsils, and inside of the mouth, the disease generally shows itself at once, in the form of an ulcer, without much previous tumefaction, so that the tonsils are not much enlarged; for, when the venereal inflammation attacks these parts, it appears to be always upon the surface, and it very soon terminates in an ulcer.

These ulcers in the throat are to be carefully distinguished from all others of the same parts. It is to be remarked that this disease, when it attacks the throat, always, I believe, produces an ulcer, although this is not commonly understood; for, I have seen cases where no ulceration had taken place called, by mistake, venereal. It is, therefore, only this ulcer that is to be distinguished from other ulcers of these parts. This species of ulcer is generally tolerably well marked; yet it is, perhaps, in all cases not to be distinguished from others that attack this part, for some have the appearance of being venereal, and what are really venereal resemble those that are not. We have several diseases of this part which do not produce ulceration on the surface, one of which is common inflammation of the tonsils, which often suppurates in the centre, forming an abscess, which bursts by a small opening, but

never looks like an ulcer begun upon the surface, as in the true venereal; this case is always attended with too much inflammation, pain, and tumefaction of the parts to be venereal; and if it suppurates and bursts it subsides directly, and it is generally attended with other inflammatory symptoms in the constitution.

There is another disease of these parts, which is an indolent tumefaction of the tonsils, and is peculiar to many people whose constitutions have something of the scrofula in them, producing a thickness in the speech. Sometimes the coagulable lymph is thrown out on the surface, and called by some ulcers, by others sloughs, and such are often called putrid sore throats. Those commonly swell to too large a size for the venereal; and this appearance is easily distinguished from an ulcer or loss of substance; however, where it is not plain at first sight it will be right to endeavor to remove some of it; and if the surface of the tonsil is not ulcerated, then we may be sure it is not venereal. I have seen a chink filled with this, appearing very much like an ulcer, but upon removing the coagulable lymph the tonsil has appeared perfectly sound. I have seen cases of a swelled tonsil where a slough formed in its centre, and that slough has opened a passage out for itself, and when it has been, as it were, sticking in this passage, it has appeared like a foul ulcer.

The most puzzling stage of the complaint is when the slough is come out, for then it has most of the characters of the venereal ulcer; but when I have seen the disease in its first stages I have always treated it as of the erysipelatous kind, or as something of the nature of a carbuncle.

When I have seen them in their second stage only I have been apt to suppose them venereal; however, no man will be so rash as to pronounce what a disease is from the eye only, but will make inquiries into all the circumstances before he forms a judgment. If there have been no preceding local symptoms within the proper date, he will suspend his judgment, and wait a little to see how far Nature is able to relieve herself. If there has been any preceding fever, it will be still less probable that it is venereal. However, I will not say of what nature such cases are, but only that they are not venereal as they are often believed to be. I have seen a sore throat of this kind mistaken for venereal, and mercury given till it affected the mouth, which, when it did, it brought on a mortification on all the parts concerned in the first disease. It would therefore appear that this species of the sore throat is aggravated by mercury.

There is another complaint of those parts which is often taken for venereal, which is an ulcerous excoriation, where the ulceration or excoriations run along the surface of the parts, becoming very broad, and sometimes foul, having a regular termination, but never going deep into the substance of the parts, as the venereal ulcer does. There is no part of the inside of the mouth exempted from this ulcerous excoriation, but I think it is most frequent about the root of the uvula, and spreads forwards along the palatum molle. That such are not venereal is evident, from their not giving way in general to mercury; and I have seen

them continue for weeks without altering, and a true venereal ulcer appear upon the centre of the excoriated part.

The difference between the two is so strong that there can be no mistake; patients have gone through a course of mercury which has perfectly cured the venereal ulcers, but has had no effect upon the others, which have afterwards been cured by bark.

The true venereal ulcer in the throat is perhaps the least liable to be mistaken of any of the forms of the disease. It is a fair loss of substance, part being dug out, as it were, from the body of the tonsil, with a determined edge, and is commonly very foul, having thick white matter adhering to it like a slough, which cannot be washed away.

Ulcers in such situations are always kept moist, the matter not being allowed to dry and form scabs, as in those upon the skin; the matter is carried off the ulcers by deglutition or the motion of the parts, so that no succession of scurfs or scabs can take place, as on the skin.

Their progress is also much more rapid than on the common skin, ulceration taking place very fast.

Like most other spreading ulcers, they are generally very foul, and, for the most part, have thickened or bordered edges, which is very common to venereal or cancerous sores; and, indeed, to most sores which have no disposition to heal, whatever the specific disease may be.

[G. G. B.—There is as great a variety in venereal sore throats as in venereal eruptions, and, from the situation of the part, the distinguishing characters are, on the whole, less easily observed. Yet some of the principal species are sufficiently distinct to be noticed.

1. The most genuine form of venereal sore throat appears to begin in the centre of the tonsil. In the early stages it is attended with very little pain or swelling, and is seldom observed until it has formed a distinct ulcer. But if attention is from any cause directed to the throat, an earlier appearance may sometimes be discovered. The tonsil may be found slightly swelled, and a yellow appearance may be seen occupying the substance of that part, and shining through the membrane on the surface which is yet entire. In a day or two ulceration takes place, and discloses a yellow or whitish slough, penetrating deep into the centre of the tonsil. There is little enlargement, and the surrounding parts are not violently inflamed. There is some sense of pricking, especially at the time of swallowing; but there is on the whole less difficulty of deglutition, and less uneasiness than might be expected from the magnitude and appearance of the ulcer. As it spreads, however, the surrounding parts become involved, and then it occasions more distress. The voice is altered, the hearing is rendered dull, and the inflammation of the soft palate impedes deglutition. Yet on the whole the progress is slow, and there is little accompanying disorder of the general system.

This species of sore throat often attends tubercular eruptions on the skin. There is reason to suppose that the secretion of the tonsils is analogous to that of the sebaceous glands of the skin, and hence it naturally happens that both parts are attacked simultaneously.

2. Venereal sores often commence on the surface of the mucous membrane, by a small foul ulceration, which passes at an early period

into rapid and extensive sloughing. These ulcers are not limited to the membrane covering the tonsils, but may arise on the soft palate, or any part of the pharynx, and are most frequently found immediately behind one of the posterior arches, or at the upper and back part of the pharynx, where the early appearance is concealed by the velum pendulum and uvula. They are sometimes preceded and always accompanied by much pain and inflammation. The soft palate is swelled and very pendulous, and the attempt to raise it in swallowing is attended with excruciating pain. In speaking, it seems to be absolutely quiescent. The irritation of the tumid velum and the slough excites a profuse secretion of saliva, and frequently much cough. The great distress which is thus occasioned produces a remarkable anxiety of countenance, which, conjoined with rapid emaciation, an accelerated pulse, and expectoration of a puriform character, gives the patient the aspect of considerable danger, and often suggests the idea that he is laboring under phthisis. The ravages committed by these ulcers are very extensive. The bone at the back part of the nares is frequently laid bare, and the disease proceeds to the destruction of the nose; and it occasionally occurs that the bodies of the vertebræ are exposed, and affected with fatal caries.

At other times, especially in cases of long standing, these sores shall extend, not by sloughing, but by rapid ulceration. The aspect is less formidable, but the progress is scarcely less destructive. This variety is most commonly seen on the soft palate. The surface is foul, but the slough which occupies it is of little depth. The sore is edged by a very narrow fringe of yellow slough, and beyond this, for the extent of a quarter of an inch, there is an inflamed margin of a deep crimson color; but there is not much general swelling of the surrounding parts. Yet the sore extends daily with extraordinary rapidity. The substance of the part seems to melt away under the ulceration, and the greater part or the whole of the soft palate is often destroyed before it can be arrested, though no distinct slough can be seen to separate through the whole of its course.

These ulcers frequently accompany rupia.

3. A third appearance, which is shortly described by John Hunter, under the name of an ulcerous excoriation, is of very common occurrence. It is distinguished by the opaque white color of the surface. This appearance sometimes supervenes at the edges of an ulcer on the tonsil. More frequently there is no ulceration, but simply this change of the surface, accompanied by more or less of redness, and, as it were, of excoriation of the neighborhood, more or less swelling of the membrane, much soreness, but very little pain. This superficial affection may attack any part of the tonsils, arches of the palate, velum pendulum, and uvula, and even the tongue or the inside of the cheeks. It is very frequently to be seen at the angles of the mouth. It often occupies the soft palate, spreading upwards in a semicircular form towards the roof of the mouth. The white appearance may be removed by slightly touching it with caustic, and then the surface beneath looks as if excoriated.

This complaint very often accompanies psoriasis of the skin, and it

is reasonable to suppose that the white color which peculiarly characterizes it implies a change analogous to that which shows itself on the surface of the body in thickening of the cuticle, and scalliness.

The author seems to be of opinion that this affection is never venereal; but cases occur where it exists in union with other venereal symptoms, and where it is only ultimately cured by the use of mercury. Yet it cannot be denied that, in the majority of cases, it is not venereal; that very often mercury aggravates instead of removing it; that it may take place where there is no suspicion of syphilis in patients laboring under psoriasis or lepra; and that, in general, the presumption is so far against its venereal origin that the treatment should be rather directed to the regulation of the diet, and to the prevention of acid secretions in the stomach, than to the extirpation of the venereal virus. The complaint is in this respect also analogous to scaly diseases of the skin. Both affections depend most usually on causes which are not syphilitic; nor do there appear to be any signs in the aspect of either by which the syphilitic can be distinguished from the non-syphilitic cases.

There are other forms of sore throat which are less important, and of which it is less easy to convey an idea by description.—G. G. B.]

When it attacks the tongue it sometimes produces a thickening and hardness in the part; but this is not always the case, for it very often ulcerates, as in the other parts of the mouth.

They are generally more painful than those of the skin, although not so much so as common sore throats arising from inflamed tonsils.

They oblige the person to speak thick, or as if his tongue was too large for his mouth, with a large degree of snuffling.

These are the most common symptoms of this stage of the disease, but it is perhaps impossible to know all the symptoms this poison produces when in the constitution. I knew a gentleman who had a teasing cough which he imputed to it; for it came on with the symptomatic fever, and continued with it, and by using mercury both disappeared.

There are inflammations of the eyes which are supposed to be venereal; for after the usual remedies against inflammation have been tried in vain, mercury has been given, on the supposition of the case being venereal, and sometimes with success, which has tended to establish this opinion. But if such cases are venereal, the disease is very different from what it is when attacking other parts from the constitution, for the inflammation is more painful than in venereal inflammation proceeding from the constitution; and I have never seen such cases attended with ulceration, as in the mouth, throat, and tongue, which makes me doubt much of their being venereal.

[G. G. B.—The author has here been misled, either by the general principle which he imagined he had discovered, and which may be shown to be in many instances erroneous, or by the want of opportunity for a more extended observation of diseases of the eye. It is established beyond the possibility of doubt, that iritis is frequently a secondary symptom of the venereal disease. The general symptoms of iritis are well known. The distinctive signs of syphilitic iritis have been supposed to be chiefly the deposit of masses of lymph, of a red-

dish or brownish color, on the surface of the iris, and the nocturnal exacerbation of pain. However, the accuracy of the diagnosis may be questioned, since it is certain that in venereal cases many instances of iritis occur where these peculiar symptoms are wanting, and where the appearance differs in nothing from the idiopathic forms of the disorder.—G. G. B.]

§ 2. *Experiments made to ascertain the Progress and Effects of the Venereal Poison.*

To ascertain several facts relative to the venereal disease, the following experiments were made. They were begun in May, 1767.

Two punctures were made on the penis with a lancet dipped in venereal matter from a gonorrhœa; one puncture was on the glans, the other on the prepuce.

This was on a Friday; on the Sunday following there was a teasing itching in those parts, which lasted till the Tuesday following. In the mean time, these parts being often examined, there seemed to be a greater redness and moisture than usual, which was imputed to the parts being rubbed. Upon the Tuesday morning, the parts of the prepuce where the puncture had been made were redder, thickened, and had formed a speck; by the Tuesday following, the speck had increased, and discharged some matter, and there seemed to be a little pouting of the lips of the urethra, also a sensation in it in making water, so that a discharge was expected from it. The speck was now touched with lunar caustic, and afterwards dressed with calomel ointment. On Saturday morning the slough came off, and it was again touched, and another slough came off on the Monday following. The preceding night, the glans had itched a good deal, and on Tuesday a white speck was observed where the puncture had been made; this speck, when examined, was found to be a pimple full of yellowish matter. This was now touched with the caustic, and dressed as the former. On Wednesday, the sore on the prepuce was yellow, and therefore was again touched with caustic. On Friday, both sloughs came off, and the sore on the prepuce looked red, and its basis not so hard; but on the Saturday, it did not look quite so well, and was touched again, and when that went off, it was allowed to heal, as also the other, which left a dent in the glans. This dent on the glans was filled up in some months, but for a considerable time it had a bluish cast.

Four months afterwards, the chancre on the prepuce broke out again, and very stimulating applications were tried; but these seemed not to agree with it, and nothing being applied, it healed up. This it did several times afterwards, but always healed up without any application to it. That on the glans never did break out, and herein, also, it differed from the other.

While the sores remained on the prepuce and glans, a swelling took place in one of the glands of the right groin. I had for some time conceived an idea that the most effectual way to put back a bubo was to rub in mercury on that leg and thigh; and thus a current of mercury would pass through the inflamed gland. Here was a good oppor-

tunity of making the experiment. I had often succeeded in this way, but now wanted to put it more critically to the test.¹ The sores upon the penis were healed before the reduction of the bubo was attempted. A few days after beginning the mercury in this method, the gland subsided considerably. It was then left off, for the intention, was not to cure it completely at present. The gland, some time after, began to swell again, and as much mercury was rubbed in as appeared to be sufficient for the entire reduction of the gland; but it was meant to do no more than to cure the gland locally, without giving enough to prevent the constitution from being contaminated.

About two months after the last attack of the bubo, a little sharp pricking pain was felt in one of the tonsils in swallowing anything, and on inspection a small ulcer was found, which was allowed to go on till the nature of it was ascertained, and then recourse was had to mercury. The mercury was thrown in by the same leg and thigh as before, to secure the gland more effectually, although that was not now probably necessary.

As soon as the ulcer was skinned over, the mercury was left off, it not being intended to destroy the poison, but to observe what parts it would next affect. About three months after, copper-colored blotches broke out on the skin, and the former ulcer returned in the tonsil. Mercury was now applied the second time for those effects of the poison upon the constitution, but still only with a view to palliate.

It was left off a second time, and the attention was given to mark where it would break out next; but it returned again in the same parts. It not appearing that any farther knowledge was to be procured by only palliating the disease a fourth time in the tonsil, and a third time in the skin, mercury was now taken in a sufficient quantity, and for a proper time, to complete the cure.

The time the experiments took up, from the first insertion to the complete cure, was about three years.

The above case is only uncommon in the mode of contracting the disease, and the particular views with which some parts of the treatment were directed; but as it was meant to prove many things which, though not uncommon, are yet not attended to, attention was paid to all the circumstances. It proves many things, and opens a field for farther conjecture.

It proves, first, that matter from a gonorrhœa will produce chancres.

It makes it probable that the glans does not admit the venereal irritation so quickly as the prepuce. The chancre on the prepuce inflamed and suppurated in somewhat more than three days, and that on the glans in about ten. This is probably the reason why the glans did not throw off its sloughs so soon.

It renders it highly probable that to apply mercury to the legs and thighs is the best method of resolving a bubo; and, therefore, also the best method of applying mercury to assist in the cure, even when the bubo suppurates.

¹ The practice, in 1767, was to apply a mercurial plaster on the part, or to rub in mercurial ointment on the part, which could hardly act by any other power than sympathy.

It also shows that buboes may be resolved in this way, and yet the constitution not be safe; and therefore that more mercury should be thrown in, especially in cases of easy resolution, than what simply resolves the bubo.

It shows that parts may be contaminated, and may have the poison kept dormant in them while under a course of mercury for other symptoms, but break out afterwards.

It also shows, that the poison having originally only contaminated certain parts, when not completely cured, can break out again only in these parts.¹

§ 3. *Of the Symptoms of the Second Stage of the Lues Venerea.*

This stage of the disease is not so well marked as the former; and, as it is of more importance, it requires all our discernment to determine what the disease is.

The parts less susceptible of this irritation are such as are more out of the way of the great exciting cause, which is the external air, as has been before related. And they begin to take on the venereal action, whether it may or it may not have produced its local effects upon the external or exposed surfaces; and they even go on with the action, in many cases, after these surfaces first affected have taken on the action and have been cured, as has been already observed. These deeper-seated parts are the periosteum, tendons, fasciæ, and ligaments; however, what the parts affected may be when the disease is in this stage is not always certain; I have known it produce total deafness, and some of those cases to end in suppuration, attended with great pain in the ear and side of the head. Such cases are generally supposed to arise from some other cause; and nothing but some particular circumstance in the history of the case, or some symptom attending it, can lead the surgeon to the nature of the complaint.

When these deeper-seated parts become irritated by this poison, the progress is more gradual than in the first; they have very much the character of scrofulous swellings or chronic rheumatism, only in this disease the joints are not so subject to it as they are in the rheumatism. We shall find a swelling come upon a bone when there has been no possible means of catching the infection for many months, and it will be of some size before it is taken notice of, from having given but little pain. On the other hand, there shall be great pain, and probably no swelling to be observed till some time after. The same observations are applicable to the swelling of tendons and fasciæ.

As these swellings increase by slow degrees, they show but little signs of inflammation. When they attack the periosteum, the swelling has all the appearance of a swelling of the bone, by being firm and closely connected with it.

¹ See the addition at p. 51. If the experiment had been made by one less practised and less accurate than John Hunter, the history of the case would lead to the suspicion that the venereal virus had been conveyed to the punctures by means of the caustic with which they were repeatedly touched. Certainly the course which they held was very different from that which is usually observed in common chancre.—G. G. B.

The inflammation produced in these latter stages of the disease can hardly get beyond the adhesive, in which state it continues growing worse and worse, and when matter is formed it is not true pus, but a slimy matter. This may arise in some degree from the nature of the parts not being in themselves easily made to suppurate; and when they do suppurate, the same languidness still continues, insomuch that this matter is not capable of giving the extraneous stimulus, so as to excite true suppuration or ulceration, even after the constitution is cleared of the original cause, and then the disease is probably scrofulous. Some nodes, either in the tendons or bones, last for years before they form any matter at all; and in this case, it is doubtful whether they are venereal or not, although commonly supposed to be so.

I have already observed that the pain in the first stages of this disease is much less than might be expected, considering the effects produced by the poison. The disease being very slow and gradual in its progress, its giving little pain may be accounted for. An ulcer in the throat causes no great pain; and the same may be said of blotches on the skin, even when they become large sores.

When the periosteum and bones become affected, the pain is sometimes very considerable, and at other times there is hardly any. It is not, perhaps, easy to account for this. We know, also, that the tendinous parts, when inflamed, give in some cases very considerable pain, and that of the heavy kind, while in others they will swell considerably without giving any pain.

These pains are commonly periodical, or have their exacerbations, being commonly worst in the night. This is common to other aches or pains, especially of the rheumatic kind, which the venereal pains resemble very much.

When the pain is the first symptom, it affords no distinguishing mark of the disease; it is therefore often taken for the rheumatism.

[G. G. B.—Venereal affections of the bones are of different kinds.

1. Simple inflammation of the periosteum, which is marked by thickening of the periosteum, with much pain and tenderness, and usually terminates in the deposit of osseous matter beneath it, and the permanent enlargement of the bone. Sometimes, though more rarely, the periosteum suppurates, and then it often happens that a portion of the bone beneath it dies and exfoliates. This constitutes the most common venereal node, and is frequent on the tibia, the ulna, and the cranium.

2. Caries of the bone, which commences in the cancellous structure and gradually perforates the external plate, and then appears as a soft tumor, which may be seen and felt externally. If this tumor is laid open, a glairy fluid is evacuated; the periosteum is found to be somewhat thickened, and the bone beneath is denuded, and in the centre of the denuded part is found a small hole, which perforates the cortical plate, and communicates with the interior of the bone. This affection is very common in the skull, and may be occasionally seen in the tibia, the jaw, and the ulna. It constitutes, in its aggravated forms, the worm-eaten caries, which is sometimes seen to pervade extensively the bones of the cranium.

3. There is, less frequently, a third form of disease, which seems to be originally simple inflammation of the bone, and which is most commonly seen in the skull. The thickness of the bone is greatly increased, and the structure becomes dense and ponderous. The periosteum is for the most part unaltered; but, during the course of the disease, it is often attacked by inflammation at particular points, and then it rises into small nodes. These nodes generally subside again in a week or two, when similar enlargements occur elsewhere, and usually in like manner disappear in their turn. Sometimes, however, instead of subsiding, they suppurate, and the surface of the bone becomes carious. Yet no considerable portion dies and separates—the ulcer does not spread; but after a certain lapse of time heals again, leaving the surface of the bone uneven, and the cicatrix closely adhering to it. The enlargement of the bone subsides on the cure of the disease, except in cases where the disease has been of very long continuance.—G. G. B.]

§ 4. *Of the Effects of the Poison on the Constitution.*

The poisonous matter, simply as extraneous matter, produces no change whatever on the constitution; and whatever effects it has, depend wholly upon its specific quality as a poison. The general effects of this poison on the constitution are similar to other irritations, either local or constitutional. It produces fever, which is of the slow kind; and when it continues a considerable time, it produces what is called a hectic disposition, which is no more than an habitual slow fever, arising from a cause which the constitution cannot overcome. While this exists, it is impossible that anything salutary can go on in such a constitution. The patient loses his appetite, or, even if his appetite is good, loses his flesh, becomes restless, loses his sleep, and looks sallow.¹

In the first stage of this disease, before it begins to show itself externally, the patient has generally rigors, hot fits, headaches, and all the symptoms of an approaching fever.

These symptoms, continuing for some days, and often for weeks, show that there is some irritating cause, which works slowly upon the constitution. It is then supposed to be whatever the invention or ingenuity of the practitioner shall call it; but the venereal eruptions, or nodes, upon either the periosteum, bones, tendons, or other parts, appearing, show the cause, and in some degree carry off the symptoms of fever, and relieve the constitution for a little time, but they soon recur.

These constitutional complaints, however, are not always to be found, the poison stimulating so slowly as hardly to affect the constitution, unless it be allowed to remain in it a long time.

There are a number of local appearances mentioned by authors which I never saw, such as the fissures about the anus, &c. There are,

¹ This kind of look, although arising entirely from a harassed constitution, is always supposed to be peculiar to a venereal one. This idea, however, does not arise from the look only, but from the leading symptoms.

also, a number of diseases, described by authors as venereal, especially by Astruc and his followers, which are almost endless. The cancer, scrofula, rheumatism, and gout, have been considered as arising from it, which may be in some measure true, but they are, with them, the disease itself, and all their consequences; as consumption, wasting from want of nourishment, jaundice, and a thousand other diseases, which happened many years before the existence of the lues venerca, are all attributed to it.

There is, even at this day, hardly any disease the practitioner is puzzled about but the venereal comes immediately into his mind; and, if this became the cause of careful investigation, it would be productive of good; but with many, the idea alone satisfies the mind.

[RICORD.—Secondary symptoms, wherever situated, and under whatever form developed, commonly appear without premonitory symptoms, and then their only antecedent is the preceding chancre.

But it is not uncommon to observe a profound change in the aspect of the patient; the eyes lose their brilliancy; the complexion becomes yellowish and cadaverous; the muscular power diminishes, and it is evident that there is some defect in the arterialization of the blood. In fact, I have been able to establish, by numerous experiments, that, in this state, the blood is affected and impoverished; that the proportion of globules is diminished, sometimes to a considerable extent; and that a more or less decided chloro-anæmic state is consequently produced.¹ Often, at this time, the hair begins to fall off; the cervical ganglia become engorged, and vague pains are felt, generally nocturnal, and bearing a great resemblance to the pains of rheumatism. These pains are not unfrequently situated in the sternal region, the neighborhood of the articulations of the extremities, or on the scalp, where they often simulate sick-headache or neuralgia. They differ, as we shall see hereafter, from the osteoëcopic pains, which precede or accompany the development of periostosis, and also from the deeper and later affections of the osseous system, belonging to tertiary symptoms. Finally, in certain cases, some or all of the premonitory symptoms of an acute affection are observed, and especially of an exanthema or angina, according to the region in which the symptoms are about to appear.

In the great majority of cases, however, it is only by chance that the patient observes the first constitutional symptom, though it may

¹ M. Grassi has made numerous chemical analyses of the blood of persons affected both with simple and with indurated chancres. These analyses are the more noteworthy as they were made at a time when the essential difference between these two varieties of chancre was not fully appreciated, and yet they confirm the results of clinical observation at the present day.

M. Grassi's analyses show:—

- I. That the blood of persons bearing simple chancres preserves its normal character.
- II. That the blood of persons bearing indurated chancres exhibits a diminution in the quantity of its corpuscles and an increase in the proportion of its albumen.

Thus we have additional proof of the constitutional reaction of the indurated chancre.

This deterioration of the blood in constitutional syphilis is confined to its early stages, when the virus first finds entrance into the economy; at a later period, the blood resumes its normal composition. See *Leçons sur le Chancre*, p. 145.—Ed.

have already existed a long time; or it may be first discovered by the physician, who is guided by his knowledge of the nature and necessary consequences of the primary symptom, the indurated chancre.

Syphilitic Affections of the Skin.—Following the order adopted by Hunter, and considering first those secondary diseases which appear on the skin—although this affection may show itself at the same time on the mucous membranes, or commence in the latter alone—I will observe that the skin may become covered at once with a general eruption, especially when developed a short time after the primary ulcer; whilst at a later period it is more discrete, and generally confined to certain regions.

With the same antecedent, viz., a chancre, a person may have, at the same time or successively, the various syphilitic eruptions, formerly confounded under the name of venereal pustules, but since grouped under the title of Syphilides.

It is entirely contrary to all observation to admit that any form of secondary cutaneous affections is produced by a peculiar form of the primary ulcer. A chancre is the common origin of all syphilitic diseases of the skin; and, in the presence of this fact, Carmichael's ingenious system, reconstructed in whole or in part by some more recent writers, must fall to the ground. As I have elsewhere said, if any coincidence of form and progress between primary and secondary symptoms be ever observed, it is never due to a difference in the nature of the virus, or to any influence of the primary ulcer, but to the idiosyncrasy of the patient, at the time of development of the primary disease and during the course of the constitutional phenomena.

Moreover, there is, perhaps, not a single variety of cutaneous disease, which may not be produced by the syphilitic virus; and all diseases of the skin, without exception, may complicate syphilis, either in its primary form or after constitutional infection has taken place.

Observation, independent of any preconceived ideas, proves not only that there is sometimes a fusion and combination of causes in the production of morbid affections of the skin, but also that syphilis may act in one of two ways, viz., either by exciting specific effects on the cutis, which continue dependent upon the virulent cause, or, like any ordinary non-specific agent, by giving rise to simple effects, which any other cause might produce, and which when once excited, cease to be under the syphilitic influence. These clinical truths are incontestable, and having once recognized them, we can account for the great variety of syphilitic eruptions which have been admitted, the differences and almost hopeless confusion in the descriptions of them given by authors, and the difficulty of always establishing an absolute distinction.

In order to escape as methodically as possible from this labyrinth, and circumscribe what is not always easily limited, the following divisions of syphilitic eruptions are now admitted: *The exanthematous, papular, squamous, vesicular, pustular, tubercular, and ulcerous*; the last being always a consequence of one of the preceding forms.

Denying, as I do absolutely, the existence of non-consecutive constitutional syphilis, except in cases of hereditary transmission, in which

communication of the disease from mother to child is easily comprehended, I do not admit any *primary* syphilitic eruption, of any form. Syphilitic eruptions are always consecutive to chancres. As I have already said, the time of their appearance after the primary ulcer may vary, but they never occur without it. It is well known that they may arise during the existence of a chancre, and disappear before it has healed; but they are none the less a consequence of it—for they never precede it, and never occur without its previous existence. To divide syphilitic eruptions, therefore, into primary and consecutive, is an error—unjustifiable by the form of the disease, its progress, duration, termination, and treatment. The title of successive affections, indicating the pathological conditions immediately following a chancre, is also inadmissible, since precisely similar symptoms may appear much later.¹

No age, sex, nor temperament is secure against syphilitic eruptions. They are most common in adults—a fact which is easily accounted for; but they are very readily developed in infants. Women, lymphatic subjects, and those whose constitution is already enfeebled, or who are predisposed to diseases of the skin, are, perhaps, most frequently affected. Certain concomitant pathological conditions, errors in diet, the privations of poverty, violent exercise, strong moral emotions, the use of excitants of the digestive passages, or especially of the skin, and a high or low degree of temperature, seem to favor their development.

Although, in some rare cases, an improper administration of mercury may cause the appearance of certain syphilitic eruptions, it is not true that this mineral can produce them outright. Syphilitic eruptions not only occur in patients who have taken no mercury, but they may be predicted with certainty in those, who, having had an indurated chancre, have undergone no treatment; and we may almost always succeed in curing those persons to whom we suitably administer mercury.

Syphilitic eruptions generally present a copper color; but the value of this sign has been exaggerated, though it is contrary to truth to deny its existence. The fact is, that syphilitic eruptions at their outset sometimes have a decidedly red tint, which disappears on pressure, but soon returns; whilst other cutaneous affections, entirely foreign to syphilis, offer at times so marked a copper color, that a practised eye may be deceived. It is correct to say, that the earlier after its appearance we observe an eruption, the less dark and characteristic we find its tint to be.

The form of syphilitic eruptions is most commonly circular; when annular, the circles may be complete or incomplete, isolated or united, and, in the latter case, they may appear irregular. The scales are not always as thin, dry, or dark colored; nor the scabs as thick, greenish, black, hard, and furrowed, as some authors seem to think. Though

¹ I have reserved the title of *successive* for the symptoms belonging to the same order as the primary, and precisely similar to them, succeeding them without interruption—as successive chancres, developing themselves from place to place, successive buboes, etc.

these are the most common appearances, it should be known that there are more exceptions than have been generally admitted.

The skin of persons affected with constitutional syphilis is sometimes of a cadaverous or pale yellow color, either universally or only in the intervals or neighborhood of the eruption.

Such persons have nothing peculiar in the odor of their breath, as has recently been asserted, unless in exceptional cases.

Syphilitic eruptions may appear on all parts of the skin. The following is the order of frequency in which I have observed them in different regions: the trunk and the extremities, the neighborhood of the genital organs and anus, the scalp, the face (the forehead, the *ala nasi*, the commissure of the lips, the chin, etc.), the spaces between the toes, the sole of the foot and palm of the hand, the roots of the nails, the umbilical depression, and the external meatus auditorius.

The form in which syphilitic eruptions are developed, depends on the time of their appearance after the primary ulcer; on their duration; on the particular region affected; on their repetition, and on the modifications which they receive from proper or improper treatment, and from a multitude of complicating circumstances which influence their physiognomy.

In the most simple state, and when observed a short time after the primary ulcer, the most common form of syphilitic eruptions is the exanthematous (spots, maculæ, roseola, erythema, and syphilitic ephe- lides). These maculæ are confluent or discrete, and consist of minute points, or cover a certain extent of surface. They are very rarely attended by sympathetic constitutional symptoms and almost never excite itching. They are often of a very decided red color at first, but soon grow pale or dark colored. The eruption may take place at once over the whole surface, or appear slowly and successively in different regions. These syphilitic maculæ are sometimes transient; disappearing in a few days and again reappearing at longer or shorter intervals, and lasting in some cases indefinitely. They are often observed to appear at the commencement of treatment, before it has had time to neutralize their cause. In that case, patients and even some physicians do not hesitate to attribute them to the treatment.

Rubeolar eruptions, which frequently occur in the course of a gonorrhœa in patients who are taking cubebs or copaiba, are often mistaken for syphilitic maculæ; hence, it has been thought that this eruption is often attended with gonorrhœal discharges. Indeed, it is not impossible that some simple exanthemata may act on the mucous membranes of the genital organs, as they are known to act on other mucous membranes, and *vice versa*.

As we have seen, maculæ are ordinarily the first manifestation of constitutional syphilis; but, in very many cases, they are the termination of some other preceding disease of the cutis. Sometimes, indeed, they are the only traces left of an imperfectly subdued syphilitic eruption, or one recently cured; but it often happens that these eruptions may still be found on the neighboring parts, as they are about to be replaced by maculæ; thus indicating the origin of the latter.

When the maculæ are consecutive to other eruptions, their form and

extent vary according to the species of the cutaneous affection which preceded them. Becoming less and less protuberant above the neighboring parts, they frequently subside by a kind of atrophy of the skin in the affected points, whether there be previous ulceration or not. Their color is generally darker or more coppery than that of primary maculæ; and the more so when they succeed diseases of long duration, or which have been imperfectly cured. This purplish brown tint of consecutive maculæ is still more decided on depending parts, and particularly on the legs, where other diseases foreign to syphilis so frequently present an analogous color. But whilst primary maculæ seem due to capillary congestion, which pressure easily removes and causes to disappear, consecutive maculæ appear to depend on a deposit of coloring matter in a state of intimate combination with the part, and are with difficulty rendered pale by compression. Finally, these spots, the duration of which is indefinite, and upon which treatment has in the end no effect, disappear, in the majority of cases, without leaving any trace behind; but they may be replaced, even when not accompanied by ulcerations, by white tissue, like that of cicatrices, with or without depression of the surface.

When patients are first observed at a little later period after the primary ulcer, or when accessory causes are more active, or treatment is wanting or badly applied, a papular or squamous affection is found to have succeeded the exanthematous eruption.

An early and the most common variety is the mucous papule; this is undoubtedly the constitutional symptom which may appear soonest after the primary ulcer. In many cases it succeeds the latter so rapidly and so soon after sexual intercourse, that many syphilographers have believed that it might be primary. But I feel authorized to assert that it has never been seen in a well characterized form *before the second week following the infecting coitus*—the earliest time apparently in which true secondary symptoms can be developed. *It is always preceded by a chancre*, either on the spot where the papule is developed or elsewhere. When it succeeds a chancre *in situ*, it is an instance of uninterrupted transition from a primary to a secondary symptom. In that case, the chancre assumes the character of a mucous papule during its reparative period; and the latter affection retains the prerogative of primary symptoms only in case this transformation is not everywhere complete. Mucous papules originating in this manner may exist alone for a longer or shorter time, or even permanently, unaccompanied by any other symptoms of constitutional infection; or other mucous papules may be developed in the neighboring parts or at a distance, and it is then no longer possible to distinguish one from the other. When the transformation *in situ* is complete, or papules occur at a distance as a consequence of constitutional infection, their morbid secretion is not susceptible of inoculation, like the pus of a progressing chancre. Without careful observation, however, a person may sometimes be deceived; for it is not uncommon to find among mucous papules chancres in the progressive stage, which have either preceded them, or occurred afterwards in consequence of a new infection.

A chancre itself, in consequence of cicatrization taking place irregu-

larly, may present an appearance quite analogous to that of mucous papules, owing to the granulations and elevation of its floor, and the subsidence and more or less complete disappearance of its edges; and it is not always possible to distinguish these cases from those which result from constitutional syphilis and belong to secondary symptoms.

Mucous papules are most frequent in lymphatic subjects, especially among women and children.

The regions in which they appear, in the order of their frequency, are: the anus; the vulva, especially on the internal surface of the labia majora; the genito-crural fold; the scrotum, and more particularly the angle formed by the penis and scrotum; the umbilical depression; the lips; the external meatus auditorius; the points where the toes touch each other, and the roots of the nails, which they often destroy.

Acrid secretions, the habitual moisture of certain regions, want of cleanliness, and the contact of opposed surfaces favor their development in a remarkable manner. The use of a pipe with a short stem is one of the most frequent exciting causes of their appearance on the mouth.

It is not uncommon to find mucous papules the only sign of constitutional syphilis, limited to one of the regions which I have enumerated, or occupying several at once, and situated especially in the buccal cavity (on the fauces, tongue, internal surface of the cheeks, &c.), as will be seen hereafter; but they are also frequently accompanied by other exanthematous, papular or squamous eruptions, of which they are in reality only a modification chiefly dependent on their situation, as Hunter understood so well. Sometimes, at the outset, they consist of small papules, more or less protuberant, and soon deprived of their epidermis; their surface of a grayish or brownish-yellow color, rugose or slightly granulated, and presenting superficial erosions or true ulcerations. To these papules, which are sometimes isolated and sometimes in groups, the name of *mucous papules* should be confined. At other times they consist of tubercular prominences due to the successive development of the papules, or to their being collected into groups (*mucous tubercles*, *mucous patches*, *moist flat pustules*).

Mucous patches, which differ from mucous papules only in their larger size, are sometimes of a deep violet or red color; at other times of a grayish tint, their color differs but little from that of the surrounding parts. But the particular hue of mucous patches varies according to a multitude of circumstances depending on their situation, duration, &c. Their form is at first circular; but, when several patches unite and form groups, it may be different. The surface of these patches is rugose, or rather like shagreen leather, and is formed of small granulations, some of a reddish, others of a dark-gray color, and covered with a peculiar muco-purulent secretion, which exhales a strong and offensive odor when they are situated on the genital organs, near the anus, or especially between the toes.

Mucous papules are not only the first of all secondary symptoms to appear in many cases, but they may also disappear at a very early period, even under the sole influence of repose, cleanliness, and isola-

tion of the surfaces. They are, however, very liable to return; and, when left to themselves, or badly treated, may become the seat of irregular ulcerations of various depths, which, when situated near the anus, or between the toes, often receive the name of rhagades, which is also applied to some other ulcerations. Finally, mucous papules, or rather hypertrophied mucous patches, sometimes give rise to vegetations belonging to the different varieties which we have elsewhere described.

In other regions, the papules are solid, hard, and dry; they protrude above the level of the skin, and generally terminate by resolution or desquamation. They may be discrete, or arranged in groups or circles. This form, constituting syphilitic lichen, or *scabies venerea*, may be developed very rapidly a short time after the disappearance of the primary ulcer, or even before, and, its first stage consisting of simple maculæ, pass without notice. It may extend over the whole body and face, or be confined to certain regions.

Sometimes lichen affects a chronic type; its papules are then larger, of a deeper color, flat or protuberant, and appear most commonly on the extremities, scalp, face, back, &c. It not only accompanies other syphilitic eruptions, which are often in reality its first phases, but it also undergoes evident transformations. Thus, these large, slightly projecting and scaly papules finally merge into true squamous syphilitic eruptions; and, in other cases, the lichen is succeeded by true tubercles, as Mr. Babington has well remarked. Although, generally, when the eruption undergoes no transformation, and terminates in a frank lichenoid form, the papules are solid, and do not suppurate or ulcerate, yet it sometimes happens that the epidermis becomes elevated by a fluid, which, at first serous and afterwards purulent, is absorbed at an earlier or later period; in other cases, also, the papules become ulcerated at their summit, as was observed by Bateman.

In all cases, however, lichenoid eruptions, which may appear repeatedly during the course of constitutional syphilis, persist for some time; and, though they sometimes rapidly yield to treatment, in other cases they seem to elude all medication, resisting even those therapeutic agents which have cured the other concomitant syphilitic symptoms. These eruptions, like many others, have a tendency to become more serious the later they appear after the primary ulcer, and the more the constitution has been impaired by improper treatment, or other coexisting diseases.

The larger maculæ of exanthematous eruptions are also frequently succeeded by small elevations, the color of which becomes darker and darker, or more coppery, if you prefer the term, and covered with scales, which are generally dry. These squamous eruptions, so called, are classified under psoriasis or lepra.

In the first variety (*psoriasis*), the patches are confined to a single region, or scattered at different points over the whole surface; they are discrete, approximated, or sometimes even confluent; their size varies from that of a lentil to a ten cent piece or over, and they are irregularly circular and protuberant above the neighboring parts. When the scales are detached, the surface beneath is generally smooth

and dark-colored. M. Biett has observed that when this variety simulates *psoriasis guttata* (the common and characteristic lenticular syphilitic eruption), the patch is surrounded, on the fall of the scales, by a white adherent margin, which, although quite constant, cannot be considered as pathognomonic.

In the second variety (*lepra*), which is probably the affection often described as *lepra nigricans*, and to which the name of *annular syphilitic eruption* is perhaps better applicable, the patches are perfectly round, from two lines to half an inch or more in diameter, and generally of a dark-brown or violet color, or even blackish in the centre. Their edges, in the form of a more or less perfect ring, and raised above the level of the neighboring parts, often extend centrifugally, their inner margin healing, and their outer advancing. The color of the edges is not so dark as the centre of the patches, in accordance with a law which I have elsewhere established; yet, when the eruption remains, and the circles do not enlarge, the skin resumes its normal color in the centre, while the circles continue colored for a longer or shorter time. The rings are generally due to swelling of the tissues, but they are sometimes formed of scales, which, becoming detached, leave behind them a non-protuberant circle, marked only by its color. In other cases, the rings are evidently formed of papules, more or less perfectly developed, in close contact with each other, and each one surmounted by a distinct scale, or even, in some cases, by a crust varying in thickness, which gives the cuticle a honeycomb appearance. The rings frequently touch or overlap each other in various ways, so as to form figures of eight, threes, parts of a circle, &c. This form of syphilitic eruption is infinitely more common than some writers suppose.

The varieties which we have just described often appear on the palms of the hands and the soles of the feet; the only difference which they present in this case is that the scales are thicker, harder, and of a horny consistence, in consequence of the usual state of the epidermis on these parts. On the contrary, where the skin is moist or in contact with neighboring parts, or where it resembles mucous membrane in its structure, as in the neighborhood of the anus, the vulva, the genito-crural fold, the internal surface of the prepuce, or the scrotum, &c., the scales are soft and pultaceous, or even entirely wanting, and the parts beneath ulcerated.

A vesicular syphilitic eruption is not so rare as those pathologists, who claim to collect all diseases of the skin at the Hôpital Saint-Louis, have been pleased to assert. Examples of it may always be seen in my wards at the Hôpital des Vénériens. Vesicular syphilitic eruptions correspond to *eczema impetiginodes* more frequently than to the other varieties. They are always less active and more chronic than the ordinary forms; when in confluent groups, they rest on a dark violet or coppery base; or, otherwise, each vesicle is surrounded by an areola presenting this specific tint. They are not attended by itching.

A variety of syphilitic eruptions very frequently met with at the Hôpital des Vénériens is the herpetic; it is sometimes in more or less

confluent groups, and sometimes simply circular with concentric rings or central squamous patches, which are often moist. Its distinctive characters are, the absence of itching, the violet or copper color of the affected surface or of the areola surrounding the vesicles, its slow progress, its duration, and perhaps a certain peculiarity in the mode of desquamation of the eruption, when the sero-purulent fluid which composes it is absorbed, viz., the aspect of the small, adherent, blackish crusts after this fluid dries up; finally, a persistent and specifically colored subpapular state of the eruption.

The vesicular or vesico-pustular eruptions of syphilis may simulate the different varieties of varicella; but their antecedents, progress, and duration, added to the other characters on which I have just insisted, will not leave us long in doubt, even if we hesitate a moment at the outset.

Pustular syphilitic eruptions are more common than the preceding; they sometimes belong to *psyrdracia*, at other times to *phlyzacia*; the former resembling tolerably well *acne rosacea*, the latter coming under the head of *ecthyma*; but, between these two extremes, there are often shades of difference, the limits of which are with difficulty defined.

All the forms of syphilitic pustules are in reality only a modification of other eruptions, occurring in consequence of a greater intensity of the disease, a later period in its development, or an unhealthy condition of the subject, &c. &c.

In the psydraceous pustules especially, we observe the intimate connection between this and papular eruptions, of which their base is often composed; ecthymatous pustules, on the contrary, frequently succeed squamous eruptions, which it is not rare to observe at the same time, and which, according to their variety and situation, give the pustules a peculiar form.

Those pustules which are apparently to be referred to the same elements as *psoriasis guttata*, are commonly of the size of a lentil, tolerably numerous, but slightly protuberant, and their base sometimes indurated; they contain only a small quantity of yellowish-white pus, and are surrounded with a dark areola. At the outset, it is often difficult to assign a limit between the scales and pustules, in those cases of scaly eruptions which are so common on the scalp. On the face and trunk, they are somewhat rarely followed by ulceration, and then terminate by the formation of a brownish crust, which, falling off, leaves a slight cicatrix or livid spot, sometimes hard and slightly projecting. Yet it is not uncommon for these pustules to form groups, take on inflammation, and suppurate very freely, becoming covered with thick, greenish, and very adherent crusts, which are surrounded by a violet-colored circle, and which, when detached, expose ulcerations of various depths.

At other times these pustules are larger and, in that case, frequently less numerous, affecting more particularly the extremities and especially the inferior extremities, although they may be developed on other regions; they are then to be referred to the deep variety of *ecthyma*; again, either isolated or in groups, they may resemble *impetigo*; and, finally, in other cases still, they take the form of *rupia*

with extended bases and protuberant crusts, although it is not possible for us to detect the initial bulla in the great majority of cases; this last variety denotes an older affection and a constitution impaired not only by disease, but sometimes by the abuse or bad administration of medicine.

However, in this group of syphilitic eruptions, to which the name of pustulo-crustaceous should be given, the crusts are generally brown, greenish, or black, dry and adherent. In the ecthymatous form, these crusts are set in a circle of thickened, protuberant, violet or copper-colored skin, just as a watch-glass is set in its rim; in the varieties of impetigo, the crusts are convex, granular, cleft, and overlap the surrounding surface; finally, in rupia, they are protuberant, conical, truncated, sometimes, however, concave, stratified like oyster-shells, surrounded, so long as they increase in size, by successive zones, which consist at first of the symptomatic, violet, or copper-colored areola, and at a later period, of the epidermis elevated by a collection of pus, giving rise to a new crustaceous circle; when the eruption is at its height, these crusts cover the whole surface from which they spring.

When these crusts are detached, or fall off, we find beneath them ulcers of various sizes, but rarely larger than a dollar. These ulcers attain various depths; their base is more or less engorged, their edges thickened, sometimes everted, often serrated; their floor is irregular, grayish, pultaceous, or irregularly granulated, sometimes hemorrhagic, ecchymotic, furnishing thin pus, which is sanious, sanguinolent, loaded with organic detritus and gangrenous debris, and is in some cases fetid. Sometimes the ulcers remain stationary, at other times they continue to increase; hence two varieties: ulcerous syphilitic eruptions, and ulcerating syphilitic eruptions. It is not uncommon for the ulcers to cicatrize before the crusts are detached, but most frequently the latter fall off before the former are healed. Cicatrization usually takes place from the circumference to the centre; but in rupia it is often irregular, and may commence at different points or islets in the centre, while the borders continue to ulcerate, as occurs in serpiginous chaneres.

Finally, a still more serious variety of syphilitic eruptions is the tubercular. The tubercles may attain even the size of a small hazelnut, and are then rounded and very protuberant. Either isolated, or several of them grouped together, they are most frequently situated on the back, neck, face, and particularly the forehead, on the cheeks and around the nose; they sometimes appear on the glans penis, where they may be mistaken for an indurated chancre in the reparative stage, or for the mucous patches which are commonly called *mucous tubercles*; I have seen instances of them on the tongue and neck of the uterus, which might have been taken for scirrhus or carcinomatous affections. These tubercles sometimes last a long time, and may terminate in resolution, without leaving any scar; but, in many cases, after their disappearance, the skin is thinned in the spot which they occupied, and a cicatrix or depression is left, although there has been no ulceration. In some patients, the tubercular protuberance remains permanently; its red and livid tint gradually disappears, and it is finally of a lighter color than the rest of the skin. I have seen such patients, in whom

the tubercles might have been compared to the cutaneous tumor which Alibert designated under the name of *cheloid*, except that they were smaller. On the extremities, however, and more particularly on the trunk, tubercles often assume a serpiginous course, and their form may resemble circles or parts of circles, letters and figures, as in the less severe eruptions which we have already described, and of which these are only a modification.

Though all varieties of tubercles frequently terminate in resolution or suppuration, yet it sometimes happens, especially in the serpiginous variety, that they ulcerate and become covered with crusts, giving rise to a tuberculo-crustaceous variety.

Syphilitic Affections of the Mucous Membrane.—Syphilitic affections of the mucous membranes, as I have taught in my clinical lectures for nearly twenty years, and as Mr. Babington very justly observes, present as many varieties as those of the skin. In another part of this volume, I have said that primary symptoms may occur on all the accessible mucous membranes, and, in particular, that there is scarcely a point in the buccal cavity where I have not met with examples of them. It is well known that they are frequently situated in the commencement of the rectum, in the vagina, the uterine neck and cavities, the nasal fossæ, etc.; and it should be understood that it is not always easy, in any of these cavities, to distinguish these primary symptoms from constitutional. The antecedents, when the patient has no interest in concealing them, the number of the ulcerations, the concomitant phenomena, their course and results, generally point to a rational diagnosis; but sometimes artificial inoculation, made within the proper period, can alone decide the question; and that, too, in embarrassing cases, where it is of importance to ascertain the truth.

With respect to the frequency and severity of secondary symptoms developed on the mucous membranes, we find exactly the same laws as for the cutaneous eruptions which they accompany or replace. Thus, the most common form is the erythematous, which, like some of the spots on the skin, is frequently so transient and imperfectly characterized that it is not noticed, or at least not recognized; but, in the majority of cases, the erythematous eruption is soon succeeded by patches which are perfectly analogous to the mucous patches elsewhere described in this work, and which are so well portrayed in the third variety of ulcers in the throat, of which Mr. Babington speaks, that there is little to add to his description, unless it be that these patches often take on a true tubercular development, and that they are not uncommon in the nasal fossæ, and on the uterine neck, where they have been recently confounded with granulating ulcers, which are generally entirely foreign to syphilis. Mucous patches in the buccal cavity, without analogous symptoms at the anus, are more frequently observed than mucous patches of the latter region, the throat and mouth being sound.

The proof, in all these cases, that this affection of the mucous membranes is a modification of the cutaneous squamous eruption which so often accompanies it is, that it frequently appears under the annular form belonging to that variety of syphilitic lepra, of which I have

spoken, and especially on the internal surface of the lips and cheeks, the palatine arch, and the velum palati; the well marked circles of this eruption are sometimes very protuberant, whether ulcerated or not. Again, in accordance with the strictest analogy, we find, especially on the borders of the tongue, small granulated papules, often unrecognized in practice, and which, more or less extended, irregularly cleft and ulcerated, resemble somewhat certain eruptions of stomatitis.

The mucous papules of the mucous membranes, like those of the skin, are, perhaps, contrary to Hunter's opinion, the most characteristic symptom of constitutional syphilis; and the former, as well as the latter, are affections of but little severity, disappearing readily, especially under the influence of mercurial treatment and reappearing with the greatest facility, when this treatment is incomplete or badly administered.

The other more serious eruptions of the mucous membranes—and, contrary to the generally received opinion, the less characteristic eruptions—whether situated in the nasal fossæ or cavity of the mouth, are the consequence of a morbid action in these parts, analogous to that which produces pustular or tubercular eruptions on the skin; ulcerations of various sizes also result from them, destroying the tissues to a greater or less depth, and frequently presenting an indurated base, like ulcerated tubercles in other regions.

It is important in all cases, as we shall see presently, to distinguish ulcerations which commence in the mucous membranes and may lay bare the bones, from ulcerations of these membranes which are consecutive to an affection of the submucous cellular tissue or the bones themselves, and which are to be referred to true tertiary symptoms, or, as Hunter calls it, the second period of constitutional syphilis.

Syphilitic Affections of the Eyes.—The eyes, like other parts of the body, may be variously affected in the course of a syphilitic affection. Thus, they may be the seat of primary symptoms, or experience the effects of constitutional infection. As I have previously said, a primary ulcer or chancre may be developed on the eyelids or conjunctiva as well as anywhere else; and, if rarer in these parts, it is only because infecting matter is less frequently and less intimately applied to them than to the genital organs or other regions.

But, there is one secondary symptom of which Hunter does not speak, either because it was not comprised within the system which he had laid down, or, very probably, because he was not acquainted with it; I refer to syphilitic iritis, which, moreover, has been thoroughly investigated only since the time of Beer, Saunders, Wardrop, Lawrence, Ammon, Harel, Pamard, Sanson, Velpeau, &c.

This iritis, belonging to the group of secondary symptoms, rarely appears alone. It is generally preceded or accompanied by a syphilitic eruption, and, to a certain degree, assumes its form. It may occur at an early or late period, and affect a single eye, or both eyes simultaneously or successively.

At the time of the *physiological* reaction against mercury, iritis was thought to be due to this therapeutic agent, and not to syphilis. If we did not remember all the extravagances and all the errors of that reac-

tion, it would now be difficult to conceive of such an opinion with the innumerable cases before us, in which this affection is seen to occur free from all mercurial influence, and get well the more rapidly and completely when we have recourse to this specific agent, which, in this disease, must be used bountifully, in large and frequent doses, and sometimes even to free salivation.

Oculists of the German school, admitting that iritis may be caused by constitutional syphilis, have considered it a peculiar species with peculiar symptoms; whilst most of the oculists of the French school, although they admit the cause, can find nothing in this iritis to distinguish it from ordinary cases of iritis, unless it be that it generally appears under a chronic or subacute form. In fact, there is nothing peculiar in the color nor in the irregularity of the pupil, as Beer, among others, supposed. What is really peculiar in the case is the eruption, which takes place on the iris, and which bears as great an analogy to the eruption on the skin as the anatomical differences of the two regions permit.

Syphilitic iritis is generally preceded by no premonitory symptoms, unless, as I have already said, by some other secondary symptoms, chiefly situated on the skin. Indeed, the eye sometimes becomes very much injected and reddened without the patient noticing it. In some cases, however, he has already suffered from nocturnal pains in the head, most severe over the supra-orbital ridge; sometimes, also, as in other forms of ophthalmia, the patient complains of the sensation of a foreign body in the eye, accompanied with a discharge of tears and a feeling of heat.

If we examine the eye at the commencement of this affection, we find that the vessels of the conjunctiva are injected, but that the injection is especially marked in the sclerotic vessels; and the latter form a deep red, radiated circle around the transparent cornea. If the patient be still in the early stage of secondary symptoms, and have, for instance, an exanthematous or rubeolar syphilitic eruption, the iritis will resemble this form; and, other things being equal, it will be less severe than at other times, constituting what is called *erythematous iritis*, and what some oculists have called *serous iritis*; cases in which the iris changes its color, and blue eyes become greenish and dull, and black or chestnut eyes become fawn colored. The iris is already swollen on the appearance of the above symptoms, especially towards its pupillary margin, which becomes irregular and fringed. The secretion of the aqueous humor is more or less augmented, so as to render the transparent cornea a little more protuberant than usual, and enlarge the anterior chamber. In such cases, the sight is already somewhat impaired, but it is not uncommon for the patient to have felt scarcely any pain, and especially to have had no photophobia; but if the disease slightly increase in intensity, or be accompanied with a papulo-squamous eruption, the fluxion and sensibility are augmented, the pupillary opening tends to contract, and plastic exudations take place in the substance of the iris; the aqueous humor becomes cloudy, and the abnormal colors of the iris deepen; the pupil loses its transparency, and, from its natural velvet black color, assumes a lactescent, mother-of-pearl hue,

and the sight becomes obscured. It is especially at this juncture that the pupil becomes distorted, in consequence of the plastic depositions having deprived various parts of the circumference of their power of expansion; whilst the other parts, remaining in their normal state, still retain their mobility. Hence arise a great variety of distortions, which are sometimes angular, sometimes elliptical, and sometimes ovoid. As I have already said, Beer thought the longer axis of the pupil in the last distortion was directed from above downwards, and from within outwards, its inferior extremity at some distance from the great circle of the iris, and its superior approximated towards it. But any person who has seen many cases of syphilitic iritis, with an understanding of the physical cause of the distortions of the pupil, knows that the latter are in no way fixed or regular. In this variety of iritis, the exudations of plastic lymph often become organized, and give rise to false membranes, which form adhesions with the posterior surface of the transparent cornea in the anterior chamber, or with the lens in the posterior. The organization of these false membranes within the pupil not only destroys the mobility of the iris, but forms membranous cataracts. It is not uncommon in this case for the disease to extend to the lens and destroy its transparency, whence capsular cataract may arise.

Independently of the symptoms we have just described, we often find, in the syphilitic iritis accompanying papular syphilitic eruptions, a more or less perfect development of the vessels of the iris, which, in some cases, resemble vegetations, and which Beer compares to condylomatous vegetations; but, most commonly, we observe true papules on the iris, more or less protuberant, of the size of a millet seed at largest, of a coppery-red color, and as analogous as possible to the papules on the skin.

When the iritis accompanies a vesicular or vesico-pustular eruption, or, in other words, what may be called the suppurative syphilitic eruptions, in a pyogenic state of the system in fine, the eruption on the iris no longer consists of simple papules, but of true vesicles, or vesico-pustules, which some oculists have considered abscesses of the iris. In these cases, the inflammatory phenomena are more intense, the iris more tumefied and congested; its great circle is generally of a dark coppery-red color, and it is not uncommon for the patient to complain of gravitating and even pulsating pains. Photophobia frequently supervenes, if it do not already exist, and sometimes photopsia also; the pain in the head increases, and fever, though generally absent, may appear. The disease may still terminate favorably; perfect resolution taking place, and the eye returning to its normal state. But if art do not intervene efficaciously and in time, the suppurated points break, and the pus is discharged into the anterior chamber, giving rise to hypopion, and all its consequences. Still, the iris may cicatrize in the suppurating points; though in many cases it is destroyed, to a greater or less extent, by consecutive ulceration. In these severe cases, the inflammation often involves the transparent cornea, and causes all the ravages which usually follow inflammation of this membrane. The iris can hardly be seen behind the cloudy screen in front of it; closer adhesions form, and, the inflammation extending backwards, involves

the retina and choroid, and thus excites a very serious internal ophthalmia.

Though syphilitic iritis most commonly occasions a diminution in the field of the pupil, and tends to produce pupillary atresia, yet I have sometimes observed permanent dilatation, a kind of mydriasis, which, at first, seemed to be due rather to a lesion of the sensibility than to a material or plastic change in the part.

With the exception of those analogies which we have mentioned, and which are very constant between the syphilitic eruptions and lesions of the iris, there is really nothing to establish the diagnosis but our knowledge of the cause, the antecedents, the concomitants, and the generally less acute course of this variety of ophthalmia; so that it is quite impossible, in certain cases, to distinguish it from ordinary iritis accidentally supervening in a patient affected with syphilis. In the absence, then, of pathognomonic signs, we have a right to inquire, as in certain cases of pemphigus in infants, whether syphilis does not act here like any common cause; for, I repeat, there is usually no differential sign apart from the supposed cause.

All other things being equal, the prognosis of syphilitic iritis is grave; but it is the less so, when a light affection of the skin accompanies or precedes it; the pustular and suppurative eruptions being the most serious.

Infantile Syphilis.—To finish what relates to secondary symptoms, it remains to speak of infantile syphilis.

In infants born of syphilitic parents—either of a syphilitic father or mother, or both—and whether these parents really have constitutional symptoms developed at the time, or are simply under the influence of a syphilitic diathesis, particularly in the secondary stage, syphilitic manifestations may be seen to appear some weeks or months after birth. If we take into account the influence of specific treatment upon the parents, we find that the new-born infant is in a condition analogous to that of a person who has just become infected, and in whom, unless subjected to treatment, the first manifestation of the disease will appear in the course of six months.

Pemphigus, which Professor P. Dubois¹ has lately asserted is always due to constitutional syphilis in infants, may indeed be a specific affection, as I have admitted in my *Iconographie de l'Hôpital du Midi*, not only in adults, but in infants. But it must be confessed that up to the present time, no characteristic sign has been discovered sufficient to distinguish it from the ordinary forms of *pemphigus communis*, aside from the cause to which it is referred. On the other hand, there is no inconsistency in admitting that syphilis, which so deeply impairs the constitution of the parents, may act like any common cause and excite non-specific pemphigus; for an infant is badly lodged and poorly nourished in the womb of an infected mother, apart from the influence of the virus. In fact, it is not proved that children born of a syphilitic father or mother in the different stages of the disease, necessarily have

¹ Discussion before the Academy of Medicine (*Bulletin de l'Académie Nationale de Médecine*, 1851, t. xvi. pp. 920, 954, 971, 1226).

sypilis. But whether simple or syphilitic, pemphigus is a frequent cause of death in the foetus or infant.

The unquestionable syphilitic manifestations in infants follow with tolerable regularity the order of evolution which is observed in adults, and present the same forms. In infants, however, other things being equal, mucous patches or tubercles are far more common. They are found not only in the regions where they usually exist in the adult, but also wherever the skin forms folds, as on the thighs, nates, axillæ, etc. Dry, squamous eruptions in infants are much rarer, and are generally replaced in the regions which they occupy in adults, by pustules, which are flat and soft, or covered with pultaceous scales. True pustular and ecchymatous eruptions are also very frequent; they replace the horny eruptions on the palms of the hands and soles of the feet in adults, and, by careless observers, may be confounded with true pemphigus.

In those regions which are subject to friction and pressure, or which are soiled by the stools, eruptions have a great tendency to ulcerate. This is especially observed on the sacrum, nates, and heels.

The mucous membranes are also very frequently the seat of secondary symptoms in infants. Independently of papules and mucous patches on the lips and tongue, the buccal cavity may be the seat of various symptoms which we have already studied in the adult. But a symptom frequently observed in children born with syphilis, is a severe coryza, which interferes with the respiratory functions and nursing, and is accompanied by a muco-purulent, or rather sero-sanious and even sanguinolent secretion. This secretion is a consequence of morbid changes in the pituitary membrane, which are followed by ulcerations of various depths, finally involving the osseous system.

Infants born under the influence of hereditary syphilis, are commonly poorly developed, emaciated, and lank; their muscles are soft, and their skin lax, loose, and dingy; they have the aspect of little old men. Some of them die in this state before any syphilitic symptom appears; while, on the other hand, very many come into the world with the appearance of perfect health.

It is not true that the diversity of symptoms presented by infants authorizes us to admit a congenital and an hereditary syphilis. Whatever the mode of infection, it is impossible to make this distinction.

On the other hand, infants have no primary symptoms, except those resulting from actual contagion during parturition, if the mother have inoculable primary ulcers, or those which have been communicated after birth.

Hunter, in passing from the subject of secondary symptoms, which he calls the first period of constitutional syphilis, to those belonging to the second period of confirmed syphilis, and to which I give the name of tertiary symptoms, cites some experiments, which, according to the results of my researches, must have deceived him or have been improperly explained.

If the inoculation on the glans and prepuce, of which Hunter speaks, gave rise to syphilitic ulcers, it was because the pus which was used

was not muco-pus from a gonorrhœa, but pus from a urethral chancre, as my numerous experiments have proved.

On the other hand, Hunter's observation, which at first appears to be in sufficient detail, is really wanting in precision. The succession of the symptoms is not clearly indicated; many of them are intermixed, and the dates do not fix the exact time of their appearance; so that an observation of this nature, which might have been perfectly decisive, like some that we have since made, leaves the reader undecided, not only on the question, whether the ulcers produced by inoculation were truly syphilitic, and whether the glandular swellings were not simply an effect of sympathy or non-specific irritation, but also whether the ulcerations of the throat and the spots on the skin due to constitutional syphilis, might not have been the result of another primary affection; as one is at least led to suspect from the reappearance of ulcers on the prepuce, before the development of secondary symptoms.

The effects of the mercurial treatment are, perhaps, in some points, less contestable.

If we now study those symptoms to which I have given the name of *tertiary*, we shall find that they not only differ from primary and secondary symptoms in affecting the deeper tissues, but also that in them syphilis loses, in part, its peculiar type. Though the skin is often affected at this period with the most severe tubercular eruptions, yet the subcutaneous and submucous cellular tissues, and the fibrous and osseous systems are far more frequently involved. But, in addition to these parts, where the tardy effects of constitutional syphilis are so common and clearly admitted by all good observers, we may ask ourselves, with Sanchez, and many other authors, if there be any privileged tissues of our body which are invariably exempt from the effects of syphilis? We would inquire, also, if syphilitic infection, though it may not produce all the evils with which it is reproached, be not, in a multitude of cases, the cause of the evolution, or putting into action—to use an expression of Hunter's—of diseases which have previously existed in a latent state, and of which it is thus only the exciting cause? Observation replies in the affirmative to these questions, and also teaches us that tertiary symptoms may continue under the influence of the virulent cause, or persist as local effects, after this cause has been destroyed or neutralized by treatment; it shows, in a multitude of cases, that the syphilitic virus, after having been the accidental cause of other diseases, may cease to exist, or persist as a complication; and these are circumstances which, though real, are unfortunately not always easy to appreciate.

As I have already said, tertiary symptoms rarely occur before the sixth month following the appearance of the primary ulcer, and the latter rarely remains at the time of their development; but they are frequently attended by some secondary symptom. They never furnish inoculable secretions, nor transmit characteristic constitutional syphilis from parent to child; their only hereditary influence being the frequent transmission of a taint, as injurious and almost as fearful, viz., a scrofulous diathesis.

Tertiary symptoms, which recognize a chancre as a necessary ante-

cedent, and which are preceded by secondary symptoms under the circumstances we have mentioned, often appear without any other precursory symptoms. It is not uncommon, however, after the first symptoms of syphilis have disappeared, for patients to present those phenomena which Hunter describes in speaking of this period of syphilis. After preceding the tertiary symptoms, these phenomena may cease, but they often continue through the whole duration of the former, and sometimes survive them for a longer or shorter period.

Before entering into some details on each of the more characteristic tertiary symptoms, and meanwhile recognizing the judicious observations of Hunter in respect to the influence of the different parts of the body on the production of tertiary symptoms, from which it results, however the fact may be explained, that those parts which are nearest the external surface are most frequently affected, allow me, in this place, to make a profession of faith on the influence of mercury on this phase of syphilis.

Some modern innovators, forgetting the history of art, or passing over in silence what ancient authors, before mercury was used, said of the manifestations of syphilis in the osseous and fibrous tissues, do not hesitate to impute to this remedy what is really the effect of the disease. Others, drawing their conclusions from imperfectly analyzed facts, think that they see in the diseases of the periosteum and bones a combination of the effects of mercury and syphilis; an opinion, by the way, which was advanced by Antonius Gallus and Fallopius. But here, evidently, they do not or will not recollect that, at the time most of the statistics on this point were collected, almost all patients were indiscriminately treated with mercurials, and, all not being necessarily cured, every subsequent symptom was of course preceded by mercurial treatment, though no one had the right to say, *post hoc, ergo propter hoc*, nor to attribute to the mercury all that occurred after its use. But, at the present day, when the physiological school leaves a large number of patients to themselves, or subjects them only to simple treatment, the entire series of syphilitic symptoms may be observed—as I have had the opportunity of showing in numerous instances at my clinique at the Hôpital des Vénériens—without there being the least pretext that they are the effect of mercury. On the other hand, both at the hospital and in my private practice, I have never failed to obtain, by inquiries, the history of patients who have had a gonorrhœa; a large number of such persons, as is well known, were invariably treated, a short time ago, with mercurials, as many are still at the present day; and now I am able to affirm, and it is a statement easily verified, that affections of the osseous and fibrous systems are as rare in these cases as they are common after chancres which have been badly or incompletely treated; also, that these rare and exceptional cases are in the same proportion as the constitutional symptoms which appear after urethral chancres, and are by no means proportioned to the number of individuals who have undergone mercurial treatment for a simple gonorrhœa.

Tertiary symptoms appear after mercurial treatment in the same way as secondary; that is to say, when the treatment has been badly

applied, or has been incomplete, or when the constitution has been absolutely refractory to it.

Badly administered mercurial treatment, like any other bad treatment, may aggravate tertiary symptoms by impairing the constitution, but it can never produce them outright, as is proved in persons who are subjected to mercurial influence by their occupation, or by undergoing mercurial treatment for diseases other than syphilis.

To what Hunter says of the symptoms in question, and to the excellent observations of Mr. Babington, allow me to add the following remarks:—

The effects of gonorrhœa and chancre on the testicles are different, as they are on the eyes. The first of these diseases gives rise to gonorrhœal epididymitis, which I have already described, and which is entirely independent of any virulent cause; whilst the other, by exciting constitutional infection, produces sarcocele.

Astruc, and particularly Bell, were acquainted with this syphilitic lesion, which Hunter did not believe possible; but Astley Cooper, especially, has recently done much, and Dupuytren, perhaps, a little, to call the attention of surgeons to this important disease, which is still imperfectly known by most practitioners.

Syphilitic sarcocele, to which I have given the name of albuginitis, is not unfrequently one of the first tertiary symptoms to appear, being almost a symptom of the transition period. It may occur in the fourth or fifth month following contagion or the appearance of a chancre, while early secondary symptoms still exist; but it is especially at a later period, after months or years, when late secondary symptoms have been developed, that albuginitis supervenes, and this, too, whether mercury has been administered or not for the preceding symptoms; with this difference, however, that the swelling often occurs earlier when patients have taken no mercury, or taken it improperly or insufficiently.

There is generally nothing to indicate that this disease is about to commence. Most commonly, the attention of the physician or patient is first called to it by chance, by a slight increase in the weight or volume of the testicle, or by a sensation of uneasiness. Sometimes, though rarely, a gravitating pain in the loins, felt especially at night, precedes or accompanies syphilitic engorgement of the testicle.

At the present time, after having had numerous opportunities to observe syphilitic sarcocele in all its stages, and after having often gone to meet this disease, so to speak, in order to detect it on its approach, I think I am able to give a more detailed account of it than has hitherto been done. Not to overstep the bounds, however, which I have set for myself in this work, I will confine myself to the most important points.

Albuginitis begins in the tunica albuginea or cellulo-fibrous texture of the body of the testicle, and may affect one organ alone, or both at once or successively. Unless some other morbid cause, as gonorrhœa, has acted on the testicle, syphilitic sarcocele does not involve the epididymis or vas deferens. These parts continue perfectly sound through the whole course of albuginitis, no matter how great its development;

but when the tumor acquires a very large volume, the epididymis becomes effaced, and cannot be distinguished from the body of the testicle.

Anything which can act as a morbid cause on the testicle, may become the exciting cause of syphilitic sarcocoele in patients affected with constitutional syphilis.

If we examine the disease at its commencement, we soon find one or more indurated spots forming zones, as it were, on the tunica albuginea, or situated deeper in the body of the testicle. These swellings, resembling tubercles, never form projections on the surface so as to change the shape of the organ. The indurated parts are not generally painful, either when left to themselves or when handled; but if they be compressed, more or less pain may be excited, which is only an exaggeration of the physiological sensibility of the sound testicle; and the spontaneous pain which is sometimes observed is produced in the same way by compression.

If the disease continue to progress, the induration extends; the other parts of the testicle become engorged; the tubercular indurations coalesce and form a single tumor, preserving the original form of the testicle, only of a larger size. This increase of volume, though it may be considerable, is, however, never so great as an encephaloid testicle may attain.

A testicle affected with syphilitic sarcocoele, either in whole or in part, gives to the touch a sensation of hardness and resistance. It is generally heavy, and draws on the cord by its weight, exciting pain in the corresponding groin, and even in the lumbar region. When the whole testicle is involved, it ceases to be painful, and is no longer tender to the touch.

No matter what size the testicle attains in syphilitic sarcocoele, the skin of the scrotum does not change its color or temperature, and remains perfectly free from adhesions.

The course of albuginitis is generally chronic or subacute; but I have seen it acute in some young subjects of lymphatic temperament, and when it was complicated with gonorrhœal epididymitis; in such cases, the albuginitis might be mistaken for simple orchitis.

Syphilitic sarcocoele may last for months or years. Generally, as I have said before, it is very difficult to fix the time of its commencement, and hence the difficulty of ascertaining its duration.

Albuginitis generally terminates in resolution without leaving any traces of its passage, and the testicle resumes its normal state, especially when the pathological changes have been partial, or art has promptly intervened, before the complete destruction of the seminiferous vessels. In such cases, even if the testicles have become entirely insensible, it gradually regains its normal sensibility; but this does not take place when the tumefied vessels are completely destroyed and the engorgement is succeeded by atrophy, as frequently occurs. Atrophy, which is almost an inevitable result when syphilitic sarcocoele is not recognized or not treated, may be partial or general, like the lesions which precede it. It sometimes happens that atrophy is the first symptom of which patients complain. As may be seen from an observation

published by M. Vidal, some physicians think that the testicle becomes atrophied under the influence of constitutional syphilis without any previous lesion. But the mistake into which M. Vidal and several other observers have fallen is accounted for, when it is known that partial or total albuginitis may occur without the testicle necessarily becoming so large or painful as to excite the attention of patients.

It may be laid down as a rule that, whenever syphilis alone acts on the testicle, suppuration never occurs; tubercular tumors of the scrotum, like other syphilitic tubercles of the cellular tissue, can alone suppurate.

In some cases, partial or total albuginitis, after having increased the volume of the testicle to a certain degree, remains *in statu quo*, in consequence of a kind of degeneration of the fibro-plastic tissue which constitutes the lesion and which renders the tumor cartilaginous, or even osseous, of which I have met with some examples. It is also not uncommon to find persistent indurations of parts of the organ composed of masses of cicatrices, as it were.

In syphilitic sarcocele, the seminal secretion undergoes changes which are more appreciable when the two testicles are affected. At first, its quantity diminishes; then its qualities are changed; the spermatozoa become less and less numerous; and, if the two organs be entirely involved, finally disappear with the other elements of the sperm. The genital functions follow the same course; venereal desire is decreased, erections become less frequent, and sexual intercourse, which is less and less sought after, at last becomes impossible.

Now that the diagnosis of scrotal tumors is better understood, and we are consequently more cautious in performing castration, pathological specimens of syphilitic albuginitis are very rare, especially as it is essentially a curable disease.

I have had an opportunity, however, of studying the pathology of this lesion, and have found, as I said in commencing, that it is seated in the tunica albuginea and the fibro-cellular structure of the body of the testicle; that the engorgement consists of fibro-plastic tissue, which involves and obliterates the tubuli seminiferi; the gradual diminution of which can be traced until they completely disappear; and, finally, that in the last stage of this degeneration, the transition of the fibro-plastic tissue into inodular fibrous tissue can be followed till it terminates in total atrophy.

The differential diagnosis, which was formerly obscure, has now acquired a great degree of precision, to which our clinical studies have certainly contributed. We shall find symptoms more than sufficient to distinguish syphilitic sarcocele from the diseases for which it has been most frequently mistaken, viz., chronic orchitis, strumous sarcocele, true tubercular sarcocele, and cancerous sarcocele, if we take into consideration the following circumstances; the antecedents in the case, as above indicated; the period (primary, secondary, or tertiary) which the syphilitic affection has attained—which may be generally ascertained from the symptoms accompanying this lesion at the outset—its frequent simultaneous or successive invasion of the two testicles; the integrity of the epididymis, and especially of the vas deferens, and con-

sequently the absence of all lesions of the vesiculæ seminales and the prostate, unless there be some other complication; the absence, also, of all sympathy on the part of the lymphatic vessels or venous system; the evolution of the affection; the character of the pain, which decreases, and finally disappears completely when the disease approaches its last stage; the tendency of the tumor to become more and more uniform and homogeneous; the projections on its surface gradually disappearing and leaving the organ in its natural form, whilst the contrary takes place in the other affections, which may be confounded with this; the fact that the enlargement of the testicle is confined within a certain limit; and, finally, the almost inevitable tendency to atrophy, the absence of suppuration, and the salutary influence of appropriate treatment.

At a time when syphilitic sarcocele was not understood, its prognosis was confounded with that of cancer, and, unfortunately, castration was consequently too often resorted to, as I convinced myself from the practice of my surgical preceptors.

Now, thanks to my semeiology—no offence to my learned and intellectual contemporary, M. Malgaigne—and thanks especially to the methodical treatment which I have introduced and recommended for the different phases of syphilis, syphilitic sarcocele has become one of the easiest syphilitic phenomena to cope with and to conquer; and its treatment is a true conquest in surgery. There is, indeed, a great difference between the diagnostic signs we have just laid down and the empirical method employed by Dupuytren and other surgeons of his reputation, which consisted merely in trying the effect of mercury on the case; which, even supposing it specific, might resist the action of this therapeutic agent, in which case it was condemned to the knife, whilst, at the present day, we know that it can be subdued by a remedy of very different properties, viz., iodide of potassium, which, as I have proved, is the specific for tertiary symptoms.

The prognosis is always less serious when the disease is treated early, and when a large portion of the organ still retains its physiological sensibility.

Allow me to add a word farther. Iodide of potassium has been accused of producing atrophy of the secreting organs, and especially of the testes; here, again, the disease has been confounded with the remedy. The atrophy depends on the former and not on the latter; for if one testicle alone be affected, it alone is atrophied. No doubt but that, in grave affections of the general system, the testicles, like other organs, may decrease in size and become emaciated, if I may be allowed the expression; but in that case, when health returns, they recover their power, vigor, and relative size. It is a temporary weakness, but not atrophy; and iodide of potassium, instead of having this effect on the secreting organs, and especially on the testes, may, by modifying the general state of the system, restore them to their natural size.

Plastic or fibro-plastic degenerations, which we have just examined in the case of syphilitic sarcocele, are met with in other organs. They are quite common in the muscles, particularly in the muscles of the

extremities. I have met with them only in the flexors, either from mere chance or because the disease has a predilection for these muscles. These plastic degenerations follow the phases which we have just described. They consist at first of indolent indurations of greater or less extent, which, by their development, impede the functions of the muscles rather than excite pain. The patients complain only when the muscles are stretched in extension; flexion, on the contrary, or the approximation of the extremities of the affected muscle, excites no pain. The muscles subjected to this kind of induration, in which the muscular fibres finally disappear, become contracted, and at last, if the disease continue and art do not intervene in time, are atrophied and permanently flexed, supposing that the flexors are the muscles affected. I have had an opportunity of observing the same degeneration in the heart, of which a fine example is given in my *Iconographie de l'Hôpital des Vénériens*.

Osteocopic pains may doubtless exist alone, continue for some time, and finally disappear, without our being able to discover any organic lesion in the part; but they are commonly the first appreciable symptom of periostitis or ostitis. These pains are fixed and located; the least pressure or the least contact increases them, but they are heightened especially by heat. It is true, as has been asserted, that they are generally nocturnal, but this character is not pathognomonic.

The period at which osteocopic pains appear, their fixed position in those parts where changes in the periosteum and bones afterwards take place, distinguish them from the wandering and more superficial pains which often arise in the neighborhood of the articulations, resemble rheumatism, and, as we have elsewhere seen, precede or accompany true secondary symptoms.

Decided inflammation of the periosteum is perhaps rarer than is commonly supposed. Detachments of the periosteum from the bone, by collections of matter giving rise to tumors adherent at their base, which pass under the name of periostoses, are generally due to superficial ostitis. These tumors, more or less circumscribed, are generally situated on the superficial bones, as the tibia, clavicle, cubitus, radius, cranium, sternum, metacarpal bones, etc., and at the points where the bones approach nearest to the skin. They are sometimes indolent, but are generally painful, and pit on pressure, or present true fluctuation. The skin over them may continue movable for a long time and not be appreciably changed. Finally, periostoses are susceptible of complete resolution, or may terminate in suppuration, the formation of abscesses or in exostoses resembling epiphyses.

Periostoses present three principal varieties. The first variety is often indolent, and sometimes rapid in its development, generally of long duration, and terminates in most cases in perfect resolution. It contains a serous or sero-albuminous fluid, which sometimes resembles scrofulous pus, or, in certain cases, synovial fluid. In the second variety, the course of which is of an acute or subacute inflammatory type, suppuration supervenes sooner or later, and the subjacent bone rarely escapes being involved first or last. Finally, in the third variety, the development of which is slower, and which is often very

painful, both *sud sponte* and on pressure, plastic matter capable of organization elevates the periosteum, which is thickened by plastic depositions between its lamellæ; and thus one of those varieties of exostoses which we are about to describe may take place.

Syphilitic osteitis has a predilection for the same regions in which periostitis most frequently occurs. Circumscribed, though sometimes diffuse, osteitis attacks the superficies or the parenchyma of the bones. Generally slow and chronic in its course, it often assumes a subacute form, and after appearing for some time as a simple ostealgia, is finally betrayed externally by the swelling which it excites. The tumor succeeding inflammation of the bones is sometimes due to an effusion of lymph, like that which forms the callus in fractures, or like that found in periostoses of the third variety mentioned. It then constitutes an epigenic exostosis resembling an epiphysis, its form and volume varying in size, its base broad or pediculated, and its surface smooth or rough. These epiphysary exostoses, due to ossification of plastic periostoses, are sometimes separated from the subjacent bone by a layer of periosteum, which is but slightly adherent, and which allows them to be easily detached before ossification is complete. At other times, the swelling depends on a thickening of the whole substance of the bones, giving rise to parenchymatous exostosis or hyperostosis.

Osteitis terminates in resolution, suppuration, caries, necrosis, or in induration forming eburnated exostoses.

Resolution takes place without difficulty when the swelling depends on an affection of the cellular tissue of the bone, or on an effusion of plastic lymph. When the disease is situated in the spongy bones, particularly in the bones of the face, and, above all, in the superior maxillary bones, suppuration occurs frequently and easily. Necrosis is often due to the relative violence of the inflammation compared with the vitality of the osseous system, but is produced still more frequently by the effusions which suddenly take place in the tissues, and the detachment and destruction of the surrounding soft parts, involving the nutritive vessels. Necrosis may take place either before, at the same time, or after caries; but generally—and this is especially true of the facial bones—what is considered necrosis is only the result of caries in which all the organic tissues are destroyed by that kind of ulceration and suppuration peculiar to bone, leaving only the calcareous substance, which then forms a very different sequestrum from that of true necrosis, in which all the anatomical elements of bone remain. Finally, its termination in persistent induration or eburnation takes place whenever the tumor is due to a deposition of inorganic saline matter, such as enters into the natural composition of bones, with more or less complete disappearance of their cellular tissue and fibrous structure. It is evident that exostoses may, from their situation, encroach upon neighboring organs, and give rise to lesions and symptoms depending on the functions of the organs.

Deep tubercles of the cellular tissue do not ordinarily appear till very late after the primary ulcer. With the exception of some slight cases, they are the consequence of a profound change in a constitution

under the influence of syphilitic cachexia. These tubercles, either isolated or in groups, and often somewhat numerous, commence with a small tumor, scarcely perceptible at first, but hard, adhering to the skin or mucous membrane by a kind of pedicle, and movable on the subjacent and surrounding parts. They almost always increase slowly, and are unattended with pain. It often takes five or six months or more for them to attain their limit, when they may be as large as a filbert or walnut. They are still very hard, but soon become adherent, and fluctuation may gradually be detected through a kind of cyst, which serves as their envelop. The skin, which up to this time may have remained unchanged both in texture and color, becomes of a brownish-red or violet color, soon grows thin, and is perforated in one or more points, giving vent to thin ichorous pus, which contains organic debris. Large irregular ulcerations soon succeed these openings, and the skin becomes thin and detached. These ulcers last till the elimination of the tubercular cyst, which begins to suppurate at its centre. When once these cysts are cast off by the suppuration of the neighboring parts, the ulcers, unless kept open by some other cause, begin to heal, and finally leave a cicatrix perfectly analogous to that of deep burns.

These tubercles of the cellular tissue are rarely developed everywhere at once. Most frequently they succeed each other, so as to last months or years, no matter how they are treated. They are often isolated, but sometimes agglomerated. Although they occur most frequently beneath the skin, especially on the external surface of the extremities, where the fasciæ are most dense, they are also often met with in the substance of the lips or cheeks, within the buccal cavity, in the substance of the velum palati, beneath the mucous membrane of the pharynx and in the tongue, which then seems as if stuffed with small nuts, resembling the inequalities of scirrhus, and, after suppuration and ulceration have taken place, they are easily mistaken for cancer; the same thing is observed in the scrotum.

Never, at any stage, do these tumors affect the neighboring lymphatic ganglia; and this, in many cases, will serve to distinguish them from an indurated chancre, which is promptly accompanied by its symptomatic pleiad of ganglia, and from cancer, which does not act on the ganglia till a much later period.

Syphilitic tubercles of the cellular tissue may be developed in the deep organs. I have met with them in the brain, of which I showed a fine instance to the Academy of Medicine; also in the liver and lungs. It is evident that in consequence of the situation, texture, and functions of organs, there is, besides the *intrinsic symptomatology*, as I would call it—meaning thereby the symptomatology belonging to the lesion itself—a *relative symptomatology* peculiar to each region, on which I have no need to insist, and which generally marks the true nature of the disease, when we cannot refer to the other diagnostic elements, which are to be found with more or less ease in a knowledge of the antecedents, in a just appreciation of the concomitant syphilitic lesions, and in the influence of rational treatment.—RICORD.]

[EDITOR.—Dr. G. S. Lagneau, son of the author of the *Traité des Maladies Syphilitiques*, published his *Thèse de Paris*, in 1851, on “Pulmonary Diseases, caused or influenced by Syphilis.” In this thesis, he collects fifty-three cases of diseases of the lungs, apparently more or less connected with syphilis, and endeavors to prove that syphilis may act on the lungs and bronchia :—

I. By producing changes essentially syphilitic in their character and divisible into two classes :—

1. Affections, which are generally slight, consisting of acute inflammation of the bronchia and the parenchyma of the lungs, intermittent inflammation of the bronchia or asthma, and chronic inflammation of the bronchia.

2. Serious affections, which are described by most authors under the head of phthisis, comprising ulcerous chronic inflammation of the bronchia, chronic inflammation of the parenchyma of the lungs and the lymphatic ganglia, inflammation of the pleura, and syphilitic tubercles.

II. By aggravating and hastening the development of pre-existing depositions of tubercle.

M. Lagneau enters at length into the symptoms of these various lesions, but it must be confessed that he does not succeed in establishing any pathognomonic signs by which they may be recognized.

Within the last few years, certain pathological changes in the viscera have been noticed by MM. Dubois, Depaul, and Gubler, in *post-mortem* examinations of infants who have died of hereditary syphilis ; and these changes have therefore been attributed to the influence of this disease. For the following condensed summary of the original papers by the authors mentioned, I am chiefly indebted to the recent work of MM. Maisonneuve and Montanier, entitled *Traité Pratique des Maladies Vénériennes*, Paris, 1853.

Abscesses of the Thymus Gland.—Professor Dubois was the first to call the attention of practitioners to a peculiar affection of the thymus gland, which he considers due to hereditary syphilis, and which consists in the presence of pus in this organ, either distributed at various points or collected in an abscess. The external aspect of the gland is perfectly normal, presenting its usual color, volume, and consistency ; but when cut, a number of small suppurating points are observed, or a collection of pus ; never, however, very abundant. This condition of the thymus gland almost always coexists with other clearly syphilitic lesions, and especially with *pemphigus neonatorum*. It is well to know, however, that this gland naturally secretes a whitish viscid fluid, which might be mistaken for a purulent secretion dependent on infantile syphilis. It is sufficient to mention the possibility of this error, which may be avoided with a little care. This affection may be observed in the dead fœtus, as well as in children who, born with the appearance of perfect health, afterwards die of hereditary syphilis. (See *Gaz. Méd. de Paris*, 1850, p. 392.)

Syphilitic Changes in the Lungs.—Dr. Depaul observed, about the same time, an affection of the lungs in infants, which he attributes to syphilitic

infection. This affection appears under two distinct forms, like the abscesses of the thymus gland; sometimes as masses of simple induration due to infiltration of pus, at other times as true purulent collections, with walls varying in thickness, and infiltrated with a fluid of the same nature. M. Depaul has found evident traces of syphilis on the skin and elsewhere coexisting with the lesion, and has, therefore, concluded that the latter is always syphilitic. In this opinion, he probably goes too far; for, while we recognize, as he does, that this affection of the lungs is often produced by syphilis, we think either it, or something very analogous to it, is met with in cases where the infant is certainly not affected with constitutional syphilis.

Syphilitic Affection of the Liver.—Several years since, Dr. Gubler described an affection of the liver also supposed to depend on hereditary syphilis. Latterly, he has published an important memoir on this subject in the *Gazette Médicale*, of which the following is an analysis:—

The lesion in question, when considered in relation to its *pathological anatomy*, may be *general* or *partial*. When general, the liver is very large, turgid, of a peculiar yellow color, like that of certain gun-flints. The natural appearance of the two substances composing the liver has entirely disappeared; the latter is hypertrophied, hard, and very elastic; when cut, it creaks under the knife; if compressed with some force, there flows from the cut surface a limpid, serous fluid, of a citrine color, and coagulable by heat. This general state of the liver is a little less marked in some cases, but its characters are absolutely the same.

When the lesion is partial, the liver, although hypertrophied, is less voluminous than in the preceding form; it presents a singular assemblage of colors, viz: brown and red belonging to the healthy portion, and a yellowish-flint color belonging to the diseased portion. The yellow portion is always less extended than the other, and is hard and elastic; presenting, in a word, all the characters above described as belonging to all parts of the organ when the affection is general. The sound portion retains its normal characters, but gradually loses them as it approaches the diseased part, and assumes the characters of the latter, so that there is no distinct line of demarcation between the two.

In the indurated tissue, the vessels are almost impermeable, the capillaries obliterated, and the calibre of the larger vessels much diminished—owing, according to M. Gubler, to a copious deposit of plastic lymph in the tissues of the liver, or rather to a fibro-plastic transformation of this organ in the diseased parts, proving the existence of previous inflammation; in fact, traces of the latter are found on the surface of the organ, consisting of pseudo-membranous pellicles, which are thin, transparent, not easily seen with the naked eye, but easily detached with the nail. The other organs have presented nothing worthy of notice, unless it be the lungs, which have exhibited symptoms of an acute or chronic pneumonia.

As to the *causes* of this affection, M. Gubler thinks that it is due only to syphilis; in which disease many other observers have also noticed it (MM.

Trousseau, Lebert, Depaul, etc.). Other symptoms of syphilis are almost always observed in the infant at the same time, and generally it is not difficult to ascertain with certainty that the parents are also infected; in but one case, observed by M. Gubler, was this the only lesion presented by the infant. We are, therefore, led to infer that this is really a symptom of hereditary syphilis, which our author refers to tertiary symptoms; in his opinion, it consists of a fibro-plastic degeneration analogous to tubercles of the cellular tissues and orchitis, or syphilitic sarcocele; it appears especially during extra-uterine life, but has been observed in the fœtus.

The *symptoms* of this lesion of the liver are not characteristic; none being observed except those of peritonitis. In the words of M. Gubler: "Children begin to moan, toss about their lower extremities, and, as M. Trousseau remarks, weep without shedding tears; vomiting and diarrhœa or constipation follow; the abdomen becomes flatulent; the least pressure on this region excites moaning and agitation; the pulse is quick and small; the skin preserves a medium temperature for some time. Soon, the countenance materially changes; the features become sharp, the eyes excavated, and surrounded with a bluish circle; there is extreme prostration; the limbs become cold, and the little patient soon dies.

"These symptoms rarely occur till from two to four days before death, and are far from always presenting the above characters. Generally, vomiting is the chief symptom, and is accompanied with constipation; in one case, there was diarrhœa; finally, both these functional derangements may be wanting. Provided the plastic infiltration be not very extensive, the secretion of the bile still goes on, and the more important functions of the system are not interfered with. But the case is different when nearly the whole organ is involved; the formidable symptoms just mentioned appear and reveal the nature of a disease which is now beyond the resources of art.

"Before the appearance of the preceding symptoms there is nothing to lead one to anticipate a fatal issue. But is it probable that the early phases of this affection are inappreciable? Doubtless not; there must necessarily be, at the outset of the disease, certain derangements of the digestive organs, and perhaps also of the respiratory. My researches not having as yet been directed to this point, I can only call the attention of practitioners to it."

It is remarkable that with such a lesion neither icterus, anasarca, nor œdema of the lower extremities have ever been observed; the patient is always chloro-anæmic.

It is evident from the above that we are not prepared to furnish the elements of an accurate diagnosis; still, if we find serious digestive trouble in an infant with well-characterized chloro-anæmia, and an increase in the volume and consistency of the liver, we shall be authorized to infer the existence of this plastic infiltration of the organ; and if there be also symptoms of peritonitis, the case will be no longer doubtful. This disease is always fatal, when the infiltration is very extensive; in other cases it is, to say the least, very serious.—EDITOR.]

CHAPTER III.

GENERAL OBSERVATIONS ON THE CURE OF LUES VENEREA.

It has been observed before, that there are three forms of the venereal infection, gonorrhœa, chancre, and the lues venerea, which various forms I have endeavored to account for. As they all three arise from the same poison, and as the first two depend only on a difference in the nature of the parts, and the lues venerea on another circumstance which has been explained, it would be natural to suppose that one medicine, whatever it be, would cure all the forms of this disease. But we find from experience that this does not hold good; for one medicine, that is mercury, cures only the chancre and the lues venerea, and the gonorrhœa is not in the least affected by it; and what is still more remarkable is, that the two which it cures are in no respect similar, while the gonorrhœa, which it does not cure, is similar in some respects to the chancre, which it does cure.

It may be remarked in general, that there is not only a difference in the form of the disease, but also in the modes of cure, and in the times necessary for the cure of the different forms of the disease, even when the same medicines cure. The gonorrhœa, in its cure, is the most uncertain of the three, the chancre next, and the lues venerea the most certain, although cured by the same medicine which cured the chancre.

A gonorrhœa in some cases shall be cured in six days, and in others require as many months, which, with regard to time, is about the proportion of thirty to one. A chancre may be sometimes cured in two weeks, and often requires as many months, which is in the proportion of four to one. The lues venerea in general may be cured in one or two months, which is only two to one. This calculation shows the regularity and irregularity, as to time, in the cure of each form of the disease.

I have formerly observed, that indispositions of the body often affect this disease very considerably, more especially the gonorrhœa and the chancre.

When an increase of symptoms takes place in a gonorrhœa, from an indisposition of body, nothing should be done for the gonorrhœa, the indisposition of body being only to be attended to; because we have no specific for the gonorrhœa, and in time it cures itself. But this practice is perhaps not to be followed in a chancre or lues venerea. It may be necessary in those to continue the mercury, although perhaps more gently; for the mercury is a specific that cannot be dispensed with, because neither the chancre nor lues venerea are cured by themselves, but always increase.

This form of the venereal disease I have divided into two stages.

When in the parts most susceptible of the disease, which I have called the first order of parts, and which appear to be the superficies only, the lues venerea is perhaps subject to less variety than either the gonorrhœa or chancre, and its mode of cure is of course more uniform, although the disease be less easily ascertained, at least for some time. In the second order of parts the lues venerea becomes more complicated, and its cure still less to be depended upon.

The cure of this form is much more difficultly ascertained than either of the two former; they, being always local, and their effects visible, become more the object of our senses, so that we are seldom or never deceived in the cure, although at the same time the cure is often more tedious and difficult; for whenever the symptoms of the gonorrhœa or chancre have entirely disappeared, in general the patient may look upon himself as cured of them; but this is not the case in the lues venerea.

A lues venerea is the effect of the poison having circulated in the blood till it has irritated parts so as to give them a venereal disposition, which parts sooner or later assume the venereal action, according to the order of their susceptibility.

When the venereal matter is circulating, I have supposed that certain parts are irritated by it, and that a vast number of other parts escape, as is evidently the case with the chancre; for in the case of a chancre the whole glans, prepuce, and skin of the penis have had the matter applied to them, yet only one or more points are contaminated or irritated by it, all the others escaping; and we often see in the lues venerea, that when the parts contaminated assume the action, it is confined to them without affecting other parts, although the disease be allowed to go on for a considerable time without any attempt to a cure; and also, if these parts are imperfectly cured, the disease returns only in them; therefore these effects, although arising from the constitution, are in themselves entirely local, similar to the gonorrhœa and chancre, and like them may be cured locally; and the person may still continue to have the lues venerea, although not in these, yet in other parts, because there may be many other parts in the same body that are under the venereal disposition, although they may not yet have assumed the venereal action. To cure the local and visible effects of the disease we must attack it through that medium by which it was communicated, that is, the blood; without, however, considering the blood itself as diseased, or containing the poison, but as the vehicle of our medicine which will be carried by it to every part of the body where the poison was carried, and in its course it will act upon the diseased solids. This practice must be continued some time after all symptoms have disappeared; for the venereal action may to appearance be stopped, and the symptoms disappear, and yet all return again, the venereal action not being completely destroyed. If the medicine were also a cure for the disposition in the parts second in order, and could prevent their coming into action, it would be necessary to continue it somewhat longer on their account; but this is not the case, for the visible effects, symptoms, or appearances in the first order of parts, give way to the treatment, while the parts that have only acquired the disposition, and are still inactive, afterwards assume the action and continue the disease.

This deceives the surgeon, and leaves the groundwork for a second set of local effects in the parts second in order; but I have asserted that what will cure an action will not cure a disposition; if so, we should push our medicine no farther than the cure of the visible effects of the poison, and allow whatever parts may be contaminated to come into action afterwards.

The parts that first assume the venereal action are easiest of cure; and I have suspected that those effects of the disease being external, were in some degree assisted in their cure by the local action of the medicine, which evidently passes off through those parts.

When the disease has attacked the parts second in order of susceptibility, it generally happens that they are more difficult of cure than the former; therefore, when they are affected at the same time with the former, and are cured, we may be sure that the first will be also cured. From hence, as it would appear that the parts most susceptible of the disease are also easiest of cure, it follows that the parts least susceptible of the disease are also most difficult of cure; and I believe that this is seldom or never reversed; therefore, those second in order of susceptibility have this advantage, that we have the local complaints for our guide to judge of the whole; and in such we have only to continue the treatment till they all vanish, being certain that the cure of the first, if there are any, will be involved in those of the second.

As the second are attended with more tumefaction or swelling than the first, it becomes a question whether the mercurial course should be continued till the whole have subsided. But I believe it is not necessary to continue the method of cure till the whole tumefaction disappears, for as those local complaints cannot contaminate the constitution by reabsorption, and as the venereal disposition and action from the constitution can be cured while the local effects still remain, even where the tumefaction forming nodes on the bones, fasciæ, &c. is carried the length of suppuration, there can be no occasion for continuing the course longer than the destruction of the venereal action. But this effect of our medicine is not easily known; therefore it will be necessary to pursue the method of cure till the appearances become stationary, and probably a little longer, to destroy the whole action of the disease. From these circumstances, it would appear that the venereal irritation when in this stage of the disease, is easier of cure than the effects of that irritation, such as the tumefaction.

§ 1. *Of the Use of Mercury in the Cure of the Lues Venerea.*

Mercury in the lues venerea, as in the chancre, is the great specific, and hardly anything else is to be depended upon. It is necessary that we should always consider well the effects of this medicine, both on the constitution at large and the disease for which it is given. The effects of mercury on a constitution will always be as the quantity of mercury in that constitution; and when the same quantity affects one constitution more than another, it is in the proportion of the irritability of that constitution to the powers of mercury, entirely independent of any particular preparation, or any particular mode of giving it.

With regard to the preparations of the medicine, and the modes of applying it, we are to consider two things; first, the preparation and mode that is attended with the least trouble or inconvenience to the patient; and second, the preparation and mode of administering it that most readily conveys the necessary quantity into the constitution.

Nothing can show more the ungrateful or unsettled mind of man than his treatment of this medicine. If there is such a thing as a specific, mercury is one for the venereal disease in two of its forms; yet mankind are in pursuit of other specifics for the disease, as if specifics were more common than diseases; while at the same time they are too often contented with the common mode of treating many other diseases for which they have no specific; and these prejudices are supported by the public, who have in their minds a dread of this medicine, arising from the want of knowledge of our predecessors in administering it; and many of the present age, who are equally ignorant, take advantage of this weakness.

Mercury in the constitution acts on all parts of the machine, cures those which are diseased, affecting but little those that are sound. Mercury is carried into the constitution in the same way as other substances, either externally by the skin, or internally by the mouth; it cannot, however, in all cases, be taken into the constitution in both ways, for sometimes it happens that the absorbents on the skin will not readily receive it, at least no effect will be produced, either on the disease or constitution, from such application; when this is the case, it is to be considered as a misfortune, for then it must be given internally by the mouth, although possibly this mode may be very improper in other respects, and often inconvenient. On the other hand, it sometimes happens that the internal absorbents will not take up this medicine, or at least no effect is produced either upon the disease or constitution; in such cases, it is right to try all the different preparations of the medicine, for it will sometimes happen that one preparation will succeed when another will not. I have never seen a case where neither external nor internal applications of mercury were absorbed; such a case must be miserable indeed.

I may just observe here that many surfaces appear to absorb this medicine better than others, and most probably all internal surfaces and sores are of this kind; for when we find that thirty grains of calomel rubbed in on the skin have no more effect than three or four taken by the mouth, it becomes a kind of proof that the bowels absorb it best; also, when dressing a small sore with red precipitate produces a salivation, it shows that sores are good absorbing surfaces, especially, too, when we know that the lues venerea generally arises from a chancre.

A patient with a stump which produced too much granulation was dressed with ointment containing a large proportion of red precipitate; the sore was about the size of a crown piece. It very nearly brought on a salivation, and the patient was obliged to leave it off.

A mulatto woman had upon her leg a very bad ulcer, which was about the breadth of two palms; it was dressed with red precipitate

mixed with common ointment, which soon threw her into a violent salivation.

A lady, in the month of December, 1782, was burnt over the whole breast, neck, and shoulders, as also between her shoulders, on which parts deep sloughs were formed. The sores at first healed nearly up, and tolerably well for burns; but they broke out anew, and then became more obstinate. Seven months after the accident, she came to London, with very large sores extending across the breast and upon each side to the shoulders; they were extremely tender and painful. They continued to heal for some time after she came to London; but she became ill, having been affected with extreme irritability, loss of appetite, sickness, and throwing up of her food and medicines. At this time, the sores again began to spread, and became very large. After having been two months in town with little advantage, I tried warmer dressings, as basilicon, to some parts, to see if any advantage would arise from such treatment, and it was found that these parts healed rather faster than the others; but the soreness was so great, even from the mildest dressings, that they could only be used in part. I next tried red precipitate mixed with the ointment; and, that it might increase the pain as little as possible, I ordered only ten grains to two ounces of the ointment. This appeared to agree better with the sores than the ointment alone; and we were happy in having found a dressing which both hastened on the cure and was easier than the former. But about the fourth or fifth dressing from beginning the use of the precipitate, she began to complain of her gums; the next day began to spit, and by the seventh or eighth day the mouth was so sore, and the spitting so considerable, that, upon considering the case, we began to suspect that it might proceed from the red precipitate in the dressing. The gums, inside of the cheeks, and the breath were truly mercurial. We immediately left off this dressing, except to a small corner, and had recourse to the former dressings. In a few days, the effects of the mercury abated, and the sores looked more healthy than ever, and we again began to dress part of the sores with the ointment containing precipitate, which still agreed with them. When the mouth first became affected, she had not used much above one-half of the ointment; and by the time we had discovered the cause, about three-fourths of it had been expended in dressings, so that there was not quite ten grains of precipitate applied; and, although this took up seven or eight days, and the ointment must have been soon removed from the sore by the discharge, yet a considerable spitting was produced, which lasted above a month. It is hardly to be conceived that above a grain or two could really be taken into the constitution; for when we consider the particles of precipitate were covered with ointment, and a vast discharge of matter, so as soon to remove this small quantity from the sore, we can hardly admit the possibility of more being absorbed; and if this idea of the quantity taken in is just, to what must we attribute the great susceptibility to the effects of the medicine? Was it the irritable state of the patient at the time? For the state of the constitution appeared to me to be that in which the locked jaw often takes place; and I often had this

disease in my mind. The patient afterwards got well by the use of an ointment in which pitch was an ingredient.¹ All this tends to show that sores and internal surfaces absorb better than the skin.

Besides the practicability of getting the medicine into the constitution in either way, it is proper to consider the easiest for the patient, each mode having its convenience and inconvenience, which arise from the nature of the constitution or of the parts to which it is applied, or from certain situations of life of the patient at the time. It is therefore proper to give it in that way which suits these circumstances best.

To explain this farther, we find that in many patients the bowels can hardly bear mercury at all; therefore it is to be given in the mildest form possible; also joined with such other medicines as will lessen or correct its violent local effects, although not its specific ones on the constitution at large.

When it can be thrown into the constitution with propriety by the external method, it is preferable to the internal, because the skin is not nearly so essential to life as the stomach, and therefore is capable in itself of bearing much more than the stomach; it also affects the constitution much less; many courses of mercury, which are absolutely necessary, would kill the patient if taken by the stomach, proving hurtful both to the stomach and intestines, even when given in any form, and joined with the greatest correctors; on the other hand, the way of life will often not allow it to be applied externally. It is not every one that can find convenience to rub in mercury, therefore they must take it by the mouth if possible. To obviate the inconvenience often arising from the visible effects of mercury, many preparations have been invented; but any preparation of mercury producing an effect different from the simple effects of mercury in that constitution, such as sweating or an increased discharge of urine, must be supposed either not to act as mercury, or the substance with which it is compounded produces this effect; but, if its peculiar effects are less than usual, I should very much suspect that the mercury is acting in part as a compound, and not entirely as mercury.

Mercury, like many other medicines, has two effects, one upon the constitution and particular parts, which is according to its mode of irritation, independent of any disease whatever. The other is its specific effects upon a diseased action of the whole body, or of parts, whatever the disease be, and which effects are only known by the disease gradually disappearing. The first becomes an object of consideration for the surgeon, as it is in some measure by them he is to be guided in giving this medicine so as to have its specific effects sufficient for the cure of the disease.

Whatever injury mercury may do to the constitution it is by its visible effects, and thence the pretended art in avoiding those visible effects has been too much the cause of great imposition. The part upon which its effects are most likely to fall is the part that is in most cases

¹ Added: "A gentleman introduced a bougie into the urethra smeared with mercurial ointment, and rubbed in a little on the frænum three times, and his mouth became affected."—HUME.

attempted to be avoided, or guarded against, and that is the mouth. I believe that we are not possessed of any means of either driving the mercury to the mouth, or of preventing it from attacking that part. Cold and warmth are the two great agents mentioned by authors; we find them recommending the avoiding of cold, for fear the mercury should fly to the mouth, as if warmth was a prevention; while others, and even the same authors, when talking of bringing the mercury to the mouth, recommend warmth, as if cold were a preventive. This being the case, we may reasonably suppose that neither the one nor the other has any material effect.¹

In giving mercury in the venereal disease, the first attention should be to the quantity, and its visible effects in a given time; which when brought to a pitch are only to be kept up, and the decline of the disease to be watched; for by this we judge of the invisible or specific effects of the medicine, which will often inform us that some variation in the quantity may be necessary.

The visible effects of mercury are of two kinds, the one on the constitution, the other on some parts capable of secretion. In the first it appears to produce universal irritability, making it more susceptible of all impressions; it quickens the pulse, also increases its hardness, producing a kind of temporary fever; but in many constitutions it exceeds this, acting as it were as a poison. In some it produces a kind of hectic fever; that is, a small quick pulse, loss of appetite, restlessness, want of sleep, and a sallow complexion, with a number of consequent symptoms; but, by the patient being a little accustomed to the use of it, these constitutional effects commonly become less, of which the following cases are strong instances:—

A gentleman rubbed in mercurial ointment for the reduction of two buboes. He had only rubbed it in a few times when it affected his constitution so much that it was necessary to leave it off. He was seized with feverish complaints of the hectic kind, a small quick pulse, debility, loss of appetite, no sleep, and night-sweats. He took the bark, with James's powder, and asses' milk, and got gradually rid of the complaints. As the buboes were advancing, it was necessary to have recourse to mercury again; and I told him that now it would not produce the same effects so quickly nor so violently as before. He rubbed in a considerable quantity without his constitution or mouth being affected; but the buboes suppurating, I ordered it to be left off a second time; and when they were opened he had recourse to the ointment again for the third time, and without producing any disagreeable effects. The buboes put on a healing disposition for a while, and then became stationary, showing that a new disposition was forming. He was directed to leave off the ointment and to bathe in the sea, which he did, and the buboes began to heal. In about three weeks, however, it was thought necessary to use more friction, and, when he began, which was the fourth time, it had almost an immediate and violent effect upon his mouth; he left off again till his mouth became a little better, and then returned to the mercury a fifth time, and was able to go on with it.

¹ The whole of this paragraph omitted.—HOME.

A stout healthy man used mercurial friction for a bubo till it affected his mouth; it farther brought on very disagreeable constitutional complaints, such as loss of appetite, watchfulness, sallow complexion, lassitude from the least exercise, and swelled legs; and, although various means were used to reconcile the constitution to it, yet it continued to act as a poison.

Mercury often produces pains like those of the rheumatism, and also nodes which are of a scrofulous nature; from thence it has been accused of affecting the bones, "lurking in them," as authors have expressed it.¹

It may be supposed to be unnecessary to mention, in the present state of our knowledge, that it never gets into the bones in the form of a metal, although this has been asserted by men of eminence and authority in the profession, and even the dissections of dead bodies have been brought in proof of it; but my experience in anatomy has convinced me that such appearances never occur. Those authors have been quoted by others, imaginary cases of disease have been increased, the credulous and ignorant practitioner misled, and patients rendered miserable.

[RICORD.—Though at the time Hunter wrote, he may have doubted whether mercury can be found after death in the tissues of persons who have taken it, this fact is no longer questionable at the present day, now that more exact pathological researches and more accurate chemical analyses have enabled us to demonstrate its presence, even in a metallic state, both in certain liquids and in certain solids of the economy. For information on this subject, consult the interesting work of M. Strohl (*Thèse Inaugurale soutenue à la Faculté de Strasbourg*, Nov. 27, 1838); the memoir of M. Reynaud, of Toulon, on a remarkable case of the presence of mercury in the brain (pamphlet, 1839). In a patient who died under my care of encephalitis occurring during mercurial treatment, M. Grassi, at that time chief Pharmaceutist at the Hôpital du Midi, found mercury in the softened and suppurating substance of the left anterior lobe of the cerebrum. Moreover, the possibility of finding mercury in various organs and in certain secretions, is placed beyond a doubt by the observations of Mr. A. Colson, on the presence of mercury in the blood, by Barruel's analyses, and especially by the skilful researches of our illustrious teacher, Professor Orfila. Mr. Colson's observations, it is true, were contradicted by M. Cullerier, but have recently been verified.

It would appear from the recent researches of MM. Chevalier and

¹ The following paragraphs are added:—

"Mercury often produces an itching of the skin, so much so in some that they can hardly bear it.

"Although mercury does not always affect the mouth, yet it sometimes affects the constitution of the person whose mouth cannot be affected, producing loss of appetite, pains of the rheumatic kind, and all the constitutional symptoms of hectic fever, and at the same time shall be curing the venereal disease effectually.

"A person had pains in his shoulders and blotches on the skin, supposed to be venereal. He never could be affected with mercury. I made him rub in two drachms of strong mercurial ointment every night, and the symptoms entirely disappeared, without any effects being produced by the mercury on the mouth, skin, or kidneys."—HOME.

Ossian Henry (*Journal de Chimie Médicale, de Pharmacie et de Toxicologie*, 1839), that mercury does not pass into the milk of nurses, as very many practitioners have thought. M. Peligot seems to have arrived at the same result from his researches on the milk of animals. Berruel, however, met with mercury in the breasts of a female who died of puerperal peritonitis, under M. Velpeau's care, after being treated with copious mercurial inunctions. M. Personne, the present chief pharmacist at the Hôpital du Midi, has at last shown by recent analyses that mercury may be found in the milk of nurses subjected to mercurial treatment.—RICORD.]

[G. G. B.—The symptoms which mark what the author has denominated the poisonous effects of mercury are of such importance as to require a more particular description. They assume two different forms, the one having an acute, the other a chronic character.

The former constitutes what has been denominated mercurial erethismus. The effect of the poison is here chiefly felt on the heart. The pulse becomes hurried, small, and irregular; the action of the heart violent, but at the same time irregular and fluttering; and the weakness and imperfection of the circulation are farther testified by paleness of the countenance, by frequent sighing and anxiety about the præcordia, and by unsteadiness of the limbs. In very severe cases the countenance becomes contracted, and the extremities cold. Nevertheless, the stomach and bowels show no signs of derangement, and the tongue, though unsteady and tremulous, is clean. Under these circumstances, muscular exertion is often suddenly fatal. Syncope ensues, from which the heart is too weak to recover.

If mercury is discontinued, and proper remedies are used, the action of the heart will be restored to its natural tone and regularity, and the affection will entirely disappear, leaving no consequences behind it.

In the second form, the derangement may be less immediately dangerous, but it more extensively pervades the whole system, and is more permanent. There shall be no palpitation of the heart, but the pulse shall be small and accelerated; there shall be loss of sleep and of appetite, a sallow paleness of the countenance, often a loaded tongue, and always great debility and emaciation. The general aspect shall be that of extreme ill health. If this state be allowed to continue, other symptoms indicative of general cachexia will supervene. There will be scrofulous enlargements of the glands, rheumatic pains in the limbs, or languid inflammation of the joints, having something of a scrofulous character. The ulcerative will everywhere supersede the adhesive process. Slight wounds will form sores, and when fractured bones have recently united the union will give way.

This state of constitution, if once fully established, is not easily corrected. Years frequently pass before all traces of it are removed. It is the result not so often of an inordinate dose of mercury continued only for a short period, as of a long and obstinate perseverance in the exhibition of moderate doses, notwithstanding evident signs of deteriorated health and diminished powers.

The expression of the author, added in a subsequent edition, that mercury "at the same time shall be curing the venereal disease effect-

ually," must be understood as referring to the absence of ptyalism, not to the existence of the poisonous effects of the remedy. Experience fully proves that these poisonous effects are altogether inconsistent with its action as an anti-venereal; and that perseverance in its use, after they have shown themselves, while it exposes the patient to imminent danger, at the same time in no degree answers the object of the surgeon in the removal of the disease for which it is given.—G. G. B.]

§ 2. *Of the Quantity of Mercury necessary to be given.*

The quantity of mercury to be thrown into the constitution for the cure of any venereal complaint must be proportioned to the violence of the disease. Two circumstances are, however, to be strictly attended to in the administration of this medicine; which are, the time in which any given quantity is to be thrown in, and the effect it has on some parts of the body, as the salivary glands, skin, or intestines. These two circumstances, taken together, are to guide us in the cure of the disease; for mercury may be thrown into the same constitution in very different quantities so as to produce the same ultimate effect; but the two very different quantities must be also in different times. For instance, one ounce of mercurial ointment, used in two days, will have more effect upon the constitution than two ounces used in ten; and to produce the same effect in the ten days, it may perhaps be necessary to use three ounces or more.

The effects on the constitution of one ounce used in two days are considerable, and also its effects upon the diseased parts; therefore, a much less quantity in such a way will have greater effects. But if these effects are principally local, that is, upon the glands of the mouth, the constitution at large not being equally stimulated, the effect upon the diseased parts must also be less, which is to be determined by the local disease not giving way in proportion to the effects of the mercury on some particular part.

If it is given in very small quantities, and increased gradually, so as to steal insensibly on the constitution, its visible effects are less, and it is hardly conceivable how much may at last be thrown in without having any visible effect at all.¹

These circumstances being known, it makes mercury a much more efficacious, manageable, and safe medicine than formerly it was thought to be; but unluckily, its visible effects upon some particular parts, such as the mouth and the intestines, are sometimes much more violent than its general effect upon the constitution at large; therefore, a certain degree of caution is necessary not to stimulate these parts too quickly, as that will prevent the necessary quantity being given.

The constitution, or parts, are more susceptible of mercury at first

¹ To give an idea of this, ten grains of the ointment, used every day during ten days, affected a gentleman's mouth. The ointment was of equal parts of mercury and hogs' lard. But, by means of omitting the ointment occasionally, and returning to the use of it, he at last rubbed in eighty grains every night for a month, without having his mouth, or any of the secretions, visibly affected.

than afterwards; if the mouth is made sore, and allowed to recover, a much greater quantity may be thrown in a second time, before the same soreness is produced; and indeed I have seen cases where it could not be reproduced by as much mercury as possibly could be thrown in. Upon a renewal of the course of mercury, therefore, the same precautions are not necessary as at first. We are, however, every now and then deceived by this medicine, it being hardly possible to produce visible effects at one time; and afterwards the mouth and intestines shall all at once be affected.

Mercury, when it falls on the mouth, produces in many constitutions violent inflammation, which sometimes terminates in mortification. The constitutions in which this happens I suspect are of the erysipelatous kind, or what are called the putrid; therefore, in such, greater caution is necessary. Mercury in general, that is, where it only produces its common effects, seldom or never does any injury to the constitution; it should seem only to act for the time, and to leave the constitution in a healthy state. But this is not always the case, for probably mercury can be made to affect every constitution very materially, being capable of producing local diseases, as has been mentioned, and also capable of retarding the cure of chancres, buboes, and certain effects of the lues venerea, after the poison has been destroyed.

§ 3. *Of the Sensible Effects of Mercury upon Parts.*

The sensible effects of mercury are generally an increase of some of the secretions, a swelling in the salivary glands, and increase of saliva; an increase of the secretion of the bowels, which produces purging, and an increase of the secretion of the skin, producing sweat, also often an increase of the secretion of urine. Sometimes one of these secretions only is affected, sometimes more, and sometimes all of them together; but the effects upon the mouth are the most frequent.

Mercury often produces headaches, and also costiveness, when its action on other parts becomes sensible, especially upon the glands of the mouth.

When the mercury falls upon the mouth, it does not affect all parts of it equally, sometimes attacking the gums, at other times the cheeks, which become thickened and ulcerate, while the gums are not in the least affected, as appears by the patient being capable of biting anything hard.

Mercury, when it falls upon the mouth, and parts belonging to the mouth, not only increases the discharge of those parts, but it brings on great tumefaction, which is not of the true inflammatory kind, where coagulable lymph is thrown out, but rather resembling erysipelatous tumefaction. The tongue, cheeks, and gums swell, and the teeth become loose; all which effects are in proportion to the quantity of mercury given, and the susceptibility of the parts to such irritation. It produces great weakness in the parts, in which ulceration easily takes place, especially if they are in the least irritated, which is often done by the teeth, and even mortification sometimes ensues. How far

it produces similar effects when it falls on other parts, I do not know. The saliva, in such cases, is generally ropy, as if principally from the glands affected. The breath acquires a particular smell.¹

As mercury generally produces evacuations, it was naturally imagined that it was by this means that it effected a cure of the venereal disease; but experience has taught us that, in curing the venereal disease by this medicine, evacuations of any kind produced by it are not at all necessary. And this might have been supposed, as similar evacuations, produced by other medicines, are of no service; therefore, it was reasonable to imagine that these evacuations, when produced by mercury, were also of no service, except we could suppose that the evacuation produced by the mercury was not the same with that produced by other medicines, but that it was a specific evacuation; that is to say, a discharge carrying off the venereal poison by its union with the mercury, and therefore the faster the mercury went off the sooner would the poison be carried out of the constitution. But this is not found to be the case in practice; on the contrary, evacuations produced by the medicines retard the cure, especially if the secretory organs are too susceptible of this stimulus; for then the quantity which is necessary or sufficient for the cure of the disease cannot be taken in, the effects of the medicine upon particular parts being greater than the patient can bear, and the quantity of mercury to be thrown into the constitution must be limited and regulated according to the quantity of evacuation, and not according to the extent of the disease. On the other hand, if it is given with care, so as to avoid violent evacuation, any quantity may be thrown in sufficient for the cure of the disease.

Certain evacuations may be supposed to be a mark of the constitutional effects of mercury, but they are not to be entirely depended upon, the secretions being only a proof of the susceptibility of some parts to such a stimulus; however, it is probable that in general they are a good gauge of its constitutional effects. Some have gone so far as to suppose that quantity of mercury alone, without any sensible effects, is sufficient for the cure of the disease; and this is in some degree the case, but not completely so, for we have no good proof of its affecting the constitution but by its producing an increase of some of the secretions.

§ 4. *Of the Action of Mercury.*

Mercury can have but two modes of action: one on the poison, the other on the constitution; we can hardly suppose it to act both ways. If mercury acted upon the poison only, it might be supposed to be in two ways, either by destroying its qualities by decomposing it, or by attracting it and carrying it out of the constitution. If the first were the action of mercury, then we might reasonably suppose that quan-

¹ Added: "A person could not have mercury applied externally without its occasioning violent inflammation. He could take ten or twelve grains of the *mercurius calcinatus* every day without affecting his bowels or mouth, but it affected his head, so that he could hardly walk; and, to use his own expression, he did not know 'whether his head was off or on.'"—HOME.

tity alone would be the thing to be depended upon; if the second, that the quantity of evacuation would be the principal circumstance.

But if it act upon the principle of destroying the diseased action of the living parts, counteracting the venereal irritation by producing another of a different kind, then neither quantity alone, nor evacuation will avail much; but it will be quantity joined with sensible effects that will produce the quickest cure, which, from experience, we find to be the case. But although the effects that mercury has upon the venereal disease are in some degree in proportion to its local effects on some of the glands, or some particular part of the body, as the mouth, skin, kidneys, and intestines, yet it is not exactly in this proportion, as has been mentioned. When mercury disagrees, as it were, constitutionally, producing great irritability and hectic symptoms, this action or irritation is not a counter-irritation to the venereal disease, but is a constitutional irritation having no effect on the disease, which continues to increase. Mercury, losing its effects upon the disease by use, gives a proof that it neither acts chemically, nor by carrying off the poison by evacuation, but by its stimulating power.

The effects will always be in proportion to the quantity in a given time, joined with the susceptibility of the constitution to the mercurial irritation. These circumstances require the minutest attention; and in order to procure its greatest action with safety, and to procure this in the most effectual way, it must be given till it produces local effects somewhere, but not too quickly, that we may be able to throw in a proper quantity; for local effects, produced too quickly, prevent the sufficient quantity being thrown in for counteracting the venereal irritation at large. I have seen cases where the mercury very readily acted locally, and yet the constitution was hardly affected by it, for the disease did not give way.

A gentleman had a chancre which he destroyed with caustic, and dressed the sore with mercurial ointment. He had also a slight uneasiness in one of his groins, which went no farther, but which showed an absorption of the poison. The chancre soon healed, and he rubbed in about two ounces of mercurial ointment. He began this course with small quantities: that is, a scruple at each rubbing, and increased it; however, it soon affected his mouth, and he spit for about a month. Two months after, he had a venereal ulcer in one of his tonsils. Here was a considerable sensible effect from a small quantity of mercury, which proved ineffectual, because its specific effects, as I apprehend, were not in proportion to its sensible effects, the salivary glands being too susceptible of the mercurial irritation.

On the other hand, I have seen cases where quantity did not answer, till it was given so quickly as to affect the constitution in such a manner as to produce local irritation, and consequently sensible evacuations, which is a proof that the local effects are often the sign of its specific effects on the constitution at large, and shows that the susceptibility of the diseased parts to be affected by the medicine is in proportion to the effects of it upon the mouth. Its effects are not to be imputed to evacuation, but to its irritation; therefore, mercury should be given, if possible, so as to produce sensible effects upon some parts

of the body, and in the largest quantity of mercury that can be given to produce these effects within certain bounds; and these sensible effects should be the means of determining how far the medicine may be pushed, in order to have its best effects upon the disease without endangering the constitution. The practice here must vary according to circumstances; and if the disease is in a violent degree, less regard must be had to the constitution, and the mercury is to be thrown in in larger quantities; but, if the disease be mild, it is not necessary to go beyond that rule, although it is better to keep up to it on purpose to cure the disease the sooner.

If the disease is in the first order of parts, a less quantity of mercury is necessary than if it were in the second order of parts, and had been of long standing, with its first appearances only cured, and the venereal disposition still remaining in the secondary parts. To cure the disease, whether in the form of chancre, bubo, or lues venerea, probably the same quantity of mercury is necessary, for one sore requires as much mercury as fifty sores in the same person, and a small sore as much as a large one; the only difference, if there is any, must depend upon the nature of the parts affected, whether naturally active or indolent. If there be any material difference between the recent and constitutional, which I apprehend there is, it may make a difference in the quantity. I do conceive that the recent are, upon the whole, more difficult to cure; at least they commonly require longer time, although not always.

Having thus far premised these general rules and observations, I shall now give the different methods of administering mercury.

§ 5. *Of the Different Methods of giving Mercury: externally—internally.*

Previously to the giving of mercury, it is very proper to understand, as much as possible, the constitution of the patient with regard to this medicine, which can only be known in those who have already gone through a mercurial course; but, as many of our patients are obliged to undergo this treatment more than once, it becomes no vague inquiry; for, as there are many who can bear this method much better than others, it is very proper that this should be known, as it will be a direction for our present practice. I think that few constitutions alter in this disposition, although I knew one case which admitted of a considerable quantity at one time without being visibly affected; but about a twelvemonth after the patient was affected with a very little.

When mercury is given to cure the lues venerea, whatever length we mean to go in the sensible effects of it, we should get to that length, if possible, and we should keep up to it. For we shall find it difficult to bring its effects to that standard again if we allow it to get below it. If the mercury should get beyond what we intended, we should be very much upon our guard in lowering it, and should probably begin to give it again before its effects are reduced to the intended standard; for the same quantity now will not operate so powerfully as before, insomuch that what at first produced greater effects than was intended will not be sufficient afterwards.

Mercury is best applied externally in form of an ointment. Unctuous substances keep it divided, attach it to surfaces, and do not dry; it may also be supposed that they become a vehicle for the mercury, and carry it through the absorbents to the general circulation; for it is probable that oil is as easy of absorption as watery substances.

If the symptoms are mild in the first order of parts, and the patient not accustomed to mercury, or it is known that he cannot bear the medicine in great quantity, and it is intended to conduct the cure by almost insensible means, it is proper to begin with small quantities. One scruple, or half a drachm, of an ointment made of equal parts of quicksilver and hog's lard, rubbed in every night for four or six nights, will be sufficient to begin with. If the mouth is not affected, the quantity may be gradually increased, till two or three drachms are rubbed in at each time; but if the first quantity has affected the mouth, we may be almost certain that the glands of the mouth are very susceptible to the mercurial stimulus; therefore, it will be proper to wait two or three days till that effect begins to go off.

When we begin the second time, the quantity may be gradually increased, at least a scruple every time, till two drachms or more are rubbed in each night, which may be done, without affecting the patient very considerably a second time, as has been already observed.

If all the symptoms gradually disappear, there is no more to be done but to continue this practice for a fortnight longer by way of security.

This method, steadily pursued, will cure most recent cases of lues venerea, but it is not sufficient if the disease has been merely kept under by slight courses of mercury; a greater quantity becomes necessary, from a kind of habit the constitution has acquired by which it is rendered less susceptible of the mercurial stimulus.

If the disease should return in the second order of parts, we may be certain the same quantity of mercury will not be sufficient to cure them, their action being slow under the venereal irritation, therefore requiring more than what had been first given.

I may be allowed to remark, that where the venereal symptoms have been ulcers in the mouth or throat, I have suspected that the mercury being brought to the mouth, and the saliva being impregnated with it, and acting as a mercurial gargle, cured those parts locally, and that the constitution has remained still tainted, the mercurial action in it having been much inferior to what it was in the mouth. Perhaps something similar may take place in eruptions of the skin where the mercury passes off by sweat; for we know that sulphur will cure the itch by passing off in perspiration. If these are facts, then it may in some degree account for the local symptoms in the first order of parts being easier of cure than those of the second.¹

The manner of living under a mercurial course need not be altered from the common, because mercury has no action upon the disease

¹ Added: "After venereal blotches on the skin have been removed by mercury they sometimes recur afterwards, which has led many to have recourse to mercury again; but the proper practice is to desist some time, to see what becomes of them, as they often disappear again spontaneously; but as in some they may be a recurrence of the disease, in such mercury must be given."—HOME.

which is more favored by one way of life than another. Let me ask any one what effect eating a hearty dinner and drinking a bottle of wine can have over the action of mercury upon a venereal sore, either to make it affect any part sensibly, as falling upon the glands of the mouth, or prevent its effect upon the venereal irritation? In short, I do not see why mercury should not cure the venereal disease under any mode whatever of regimen or diet.¹

I own, however, that I can conceive cold affecting the operations of mercury upon the venereal disease; it is possible that cold may be favorable to the venereal irritation, and therefore contrary to that produced by mercury; and there is some show of reason for supposing this, for I have before asserted that cold was an encourager of the venereal irritation; and therefore keeping the patient warm may diminish the powers of the disease while under the cure.

Mercury, given internally, is in many cases sufficient, although in general it is not so much to be depended on as the external application; therefore I would not recommend it, or give it in cases where the disease has not been sufficiently cured by former courses of mercury.² It is the most convenient way of giving this medicine, for many will swallow a pill who do not choose to rub the body with the ointment; indeed, there are many circumstances in life which make this mode of introducing it into the constitution the most convenient; but, on the other hand, there are many constitutions that cannot bear mercury given internally. When these two circumstances meet in the same patient it is unfortunate.

Mercury, taken internally, often produces very disagreeable effects upon the stomach and intestines, causing sickness in the one, and griping and purging in the other.

If it be found necessary to give it internally, and it disagrees either with the stomach or intestines, or both, even in the most simple preparation, its effects, whatever they are, must be corrected or prevented, by joining with the mercury other medicines. If it affect the stomach only, the mercury may be joined with small quantities of the essential oils, as the essential oil of cloves, or chamomile flowers, which will in many cases take off that effect. If it disagree both with the stomach and bowels, I believe it arises either from the mercury meeting with an acid in the stomach, by which part of it is dissolved, forming a salt, or from being given in the form of a salt, both of which will generally purge, and become the cause of their own expulsion. There are two ways of obviating these effects; the first is by preventing the salt from forming; the second, by mitigating its effects on the intestines if formed, by taking off their irritability. To prevent the salt from forming, the best way is to join the mercury with alkaline substances, either salts, or earths; and when given in a saline state it may be joined with opium, or some of the essential oils.

To prevent the formation of the salt, take of the preparations of mercury, such as *mercurius calcinatus*, *mercurius fuscus*, or calomel,

¹ The last sentence omitted.—HOME.

² The last part of the preceding sentence, beginning at "although," omitted.—HOME.

forming them into pills, with the addition of a small quantity of soft soap, or any of the alkaline salts; the alkaline salt also prevents the pill from drying; or, instead of these, a calcareous earth may be joined with the mercury, such as chalk or crabs'-eyes; upon this principle is the *mercurius alkalizatus*, which is crude mercury rubbed down with crabs'-eyes. But these substances add considerably to the bulk of the medicine, no less than twenty grains being necessary for a dose, which contains seven grains and a half of crude mercury. The *mercurius calcinatus*, rubbed with a small portion of opium, makes an efficacious pill, and in general agrees well both with the stomach and bowels. Opium has long been joined with mercury to cure the venereal disease. By some as much has been attributed to the opium as to the mercury; however, opium should be given with care, for it is not every constitution with which it agrees, often producing irritability, in some lassitude and debility, in others spasms.

If the mercury is not given in the above manner, but in the form of a salt, or the salts are allowed to form, then it should be joined with one-third of opium, and a drop of the oil of cloves, or chamomile, which will make it agree with the stomach, and prevent its purging; or, if it is found still to disagree both with the stomach and bowels, compound it still farther, by joining with the mercury the alkaline salts, the opium, and some essential oil.

A grain of *mercurius calcinatus* made into a pill, with the addition of such medicines as the stomach or bowels may require, may be given every night for a week; and if in that time it has not affected the mouth, it may be repeated evening and morning; and after the patient has been accustomed to the medicine, and it is found not to fall much upon the mouth, it may be increased to two grains in the evening, and one in the morning.

The same directions hold equally good either with the *mercurius fuscus* or calomel; but it requires more of these last preparations of mercury to have the same medicinal effect upon the disease than of the before mentioned; perhaps the proportion of their effects is about two or three to one. Why this should be the case is probably not easily accounted for, the quantity of mercury being very nearly the same in a given weight in both, for in eight grains of calomel there are seven grains of crude mercury. Three grains of these preparations appear only equal to one of the *mercurius calcinatus*. The crude mercury given in the same quantities with either of the former appears the least efficacious of all; for fifteen grains of crude mercury rubbed down with any mucilage, seems only equal to one or two of the *mercurius calcinatus*.

The corrosive sublimate, which is a salt capable of stimulating violently, is generally given in solution in common water, brandy, or some of the simple waters, and has been used with the appearance of considerable success. It would appear that it removes ulcers in the mouth as soon, if not sooner, than any of the other preparations; but this I suspect arises from its application to these parts in its passage to the stomach, acting upon them locally as a gargle. However, from experience, it appears not to have sufficient powers over the venereal irri-

tation; in recent cases only removing the visible local effects, without entirely destroying the venereal action; for many more have been found to relapse after having taken this preparation than from many of the others, which is owing to its passing very readily off by the skin. Besides, it disagrees much more with the stomach and intestines than any of the other preparations.

A grain of this medicine, dissolved in about an ounce of some fluid, is generally the dose, and increased according as it agrees with the bowels, and according to its effects upon the mouth and disease.¹

As corrosive sublimate contains an acid, and as you must be guided by the effects of the acid on the bowels, the quantity of mercury you can give in this form is necessarily smaller than in the other preparations. Ward's drop, containing less acid, can be given in larger quantity, and is more efficacious on that account. Perhaps any of these preparations united with a scruple of gum guaiacum may have more effect than when given alone, since guaiacum is found to have considerable effects on the venereal disease.²

This practice, continued for two months, will in general cure a common lues venerea; but here it is not meant that any time should be specified. After all the symptoms of the disease have disappeared, this course should be continued at least a fortnight longer; but if the symptoms disappear very suddenly, as they often do, perhaps within eight or ten days, probably from the medicine going off by those surfaces where the disease appears, the medicine should be continued three weeks, or perhaps a month longer, and the dose increased. In such cases the visible local effects appear to be cured while a venereal disposition remains in the parts.

Various are the preparations of mercury recommended for internal use, while practitioners have generally been satisfied with but one for external application. Every practitioner finds some one of the preparations answering better to appearance in some one case than another,

¹ The passage stands thus in every edition, and yet there must be some error, for the dose is larger than has ever been recommended by practitioners deserving of credit, and could not be taken without danger. The usual quantity is from a quarter of a grain to half a grain in the course of the day, and even this is generally divided into at least two doses.

But larger quantities of corrosive sublimate may be given with safety, if proper precautions are used. The object is that it should be introduced into the system, without producing any irritation on the surfaces which immediately absorb it. And this object is best answered by administering it in the form of a pill, and by giving it at the time of meals, so that it may mix with the food, and its acrid qualities may be corrected by dilution. It will be found that corrosive sublimate may be given in this way, in the dose of one third of a grain, three times in the day, or of one grain daily, without more inconvenience, or more risk of derangement of the stomach or bowels, than is incurred from the ordinary doses given without these precautions.

An opinion prevails that a course of corrosive sublimate gives the patient little security against a relapse. The observation applies chiefly to the smaller doses of the remedy, which scarcely admit of the introduction of a sufficient quantity of the mercury, unless the course be very greatly prolonged. If it be given in the dose which is mentioned above, and if the course can be continued for the usual period without interruption from its effects on the bowels, or the mouth, it may be doubted whether relapses are more frequent than after the exhibition of other preparations of mercury.

—G. G. B.

² See page 493.

which casts the balance in favor of that medicine in his mind; or others, finding the bad effects of a particular preparation at one time, have generally condemned that preparation, not to mention that deceit is often practised in the cure of this disease. One would naturally suppose that the simplest preparation is the best, that which is easiest dissolved in the animal juices, does least mischief to the stomach or general health, and is least disturbed or hindered in its operations; for we can hardly suppose that any substance joined with mercury, which alters either its chemical or mechanical properties, out of the body, can add to its power in the body, except a substance which had a similar power when acting alone. The preference generally given to the ointment shows this; and, if we could find a preparation still more simple than the ointment, that preparation should be used in preference to the crude mercury.

§ 6. *Of the Cure of the Disease in the Second or Third Stage.*

In the more advanced stages of the disease the mercurial course must be pushed farther. The greatest quantity of that medicine that the patient can bear at a time is to be thrown in, and continued with steadiness till there is great reason to suppose the disease is destroyed. It will not be possible in such cases to prevent the mouth from being considerably affected, the quantity of mercury necessary to be used for the cure of these stages of the disease being such as will in most cases produce that effect.

Before the disease has advanced so far the patient most probably has taken mercury, and it is proper to inquire how he has been affected by it, and what quantity he can bear, which will in some degree direct us in the quantity now to be begun with. If the patient has not taken mercury for a considerable time, and is easily affected by it, which is the case that admits of the least quantity, it will be necessary to begin cautiously, regulating the quantity according to circumstances; but if the person has taken mercury lately, although easily affected by it, more freedom may be used on returning to it, because it will have less power on his mouth, as also on the disease. Again, if the person has been taking mercury very lately, and is with difficulty affected by it, which is the case that admits of the greatest quantity, then it may be administered freely so as to affect the constitution in the proper time. If the mercury is brought to the mouth in six or eight days, and a considerable soreness is produced in twelve, it will in general be a good beginning. In such cases the constitution is, if possible, to be surprised by the medicine, so as to produce its greatest effects, but with such caution as to be able to keep up these effects by quantity.

Mercurial friction will answer better than mercury given internally; for in this way we are surer of throwing in a larger quantity in a given time than could be taken internally without hurting the stomach.

The quantity of mercury applied in this way should be, under certain circumstances, in proportion to the surface on which it is applied, and the surface should be completely covered with the ointment; for half an ounce of mercurial ointment, rubbed in upon a given surface, will

have nearly the same effect as one ounce rubbed in on the same surface; therefore, one ounce to have double the effect should have double the surface. The quantity of ointment must therefore be adapted to the quantity of surface, for, on a certain extent of surface, no more than a determined quantity of ointment can be applied so as to be absorbed, and applying a greater quantity would be useless; and, if the quantity of surface is greater, the same portion of ointment cannot be diffused so as to employ fully all the absorbents. Every surface which is used may therefore have its full quantity of ointment, but certainly should not have more, if we are to attribute the effects of the mercury to the quantity.

It has most probably been always the practice to rub the mercury well in, as it is termed; but I suspect that this arose rather from an idea of the surface being porous like a sponge than of absorption being performed by the action of vessels; and it is probable that this action in the vessels producing absorption may be rather disturbed than excited by friction.

How long the course is to be followed is not to be exactly ascertained; it may be thought proper to continue it till the local appearances, as nodes, have subsided; but I suspect that this is hardly necessary, except they give way readily, for in such cases the local complaints, or tumefaction, &c., generally require a longer time to be removed than the venereal action; and local applications must be of service, especially if such tumefactions are obstinate.

The manner of living under such a severe course, which is in every respect weakening, is to be particularly attended to. The patient must be supported; and the local effects of the medicine, in the mouth, preventing his taking many kinds of nourishment, especially such as are of a solid form, fluids must form his only nourishment, and these should be such as will become solid after they are swallowed; milk is of this kind. An egg beat up with a little sugar, and a little wine, sago, salep, &c., form a proper diet. In many cases wine and bark must be given through the whole course. Sugar, perhaps, is one of the best restoratives of any kind we are acquainted with, when a constitution has been very much debilitated by long fasting, from whatever cause, whether from the want of food when in health, or in the time of disease, or where the food has not been allowed to answer the constitutional waste, as in a course of mercury; and when the disease or course of mercury is gone, then sugar will restore such constitution, probably better than anything else.

Although it is not a common opinion, and therefore not a common practice, to give sugar entirely with this view, yet there are sufficient proofs of its nutritive quality over almost every other substance. It is a well-known fact that all the negroes in the sugar islands become extremely lusty and fat in the sugar-cane season; and they hardly live upon anything else. The horses and cattle that are allowed to feed upon them all become fat; the hair of the horse becomes fine. Birds which feed upon fruit never eat it till it becomes very ripe, when it has formed the greatest quantity of sugar, and even then only such as furnish the largest quantity of sugar. Insects do the same; but we can-

not have a stronger instance of this fact than in the bee. Honey is composed of sugar, with some other juices of plants, with a little essential oil; but sugar is the principal ingredient. When we consider that a swarm of bees will live a whole winter on a few pounds of honey, keep up a constant heat about ninety-five or ninety-six degrees, and the actions of the animal economy equal to that heat, we must allow that sugar contains perhaps more real nourishment than any other known substance.

We see too that whey is extremely fattening, which is the watery part of the milk, containing neither the oil nor the coagulable matter; this arises principally from the sugar it contains, for being composed of the watery part it holds all the sugar of the milk in solution. If the milk is allowed to become sour it is not so fattening, because it is the sugar which is become sour.

Although the nutritive qualities of sugar have not been so generally known as to introduce it into universal practice, yet they have not entirely escaped the notice of practitioners. Mr. Vaux, from observing the negroes in the West Indies growing fat in the sugar season, has been induced to give it in very large quantities to many of his patients, and with very good effects. Honey is perhaps as good a mode of taking this substance as any. Sweetening everything that is either ate or drank, whether by sugar in honey, or sugar alone, is probably immaterial. Yet it is probable that the other ingredients in honey may add to its nutritive quality.

§ 7. *Of Local Treatment.*

If the local effects have gone no farther than inflammation and swelling, either of the soft or hard parts, most probably no local treatment will be necessary, for the treatment of the constitution will in general remove them entirely.

It sometimes, however, happens that the local complaints will not give way, but the parts remain swelled in an indolent and inactive state, even after there is every reason for supposing the constitution is perfectly cured. In such cases the constitutional treatment is to be assisted by local applications of mercury to the part, either in the form of a plaster or ointment. The latter is by much the best mode. If these are not sufficient, as often happens, we must endeavor to destroy this disposition by producing an inflammation of another kind. I have seen a venereal node, which gave excruciating pain, cured by an incision only being made down to the bone the whole length of the node; the pain has ceased, the swelling has decreased, and the sore healed up kindly, without the assistance of a grain of mercury. Blisters have been applied to nodes with success; they have removed the pains and diminished the swellings; so far furnishing a proof that local treatment may assist mercury in many cases.

This treatment has not only been used to assist mercury in those cases where the medicine did not appear to be equal to the disease, but it has been used at the commencement of the cure, and even before mercury had been applied; but it was still thought necessary to go

through the same mercurial course as if nothing had been done to the local complaints.

It may be asked, What advantage arises from the incision or application of the blister? The advantage is immediate relief from violent pains; and as there are two powers acting, it is natural to suppose the cure will be more speedy.

After all the above-mentioned trials, it may happen that the local effects shall still remain, forming as it were a new disease, which mercury may increase; and therefore other methods of cure may be tried, as will be described hereafter.

§ 8. *Of Abscesses—Exfoliation.*

When an abscess forms in a node in the periosteum the bones are generally affected, and make part of the abscess. Great attention should be paid to them, for suppurations in them are not like suppurations in common abscesses; they are seldom produced from the true suppurative inflammation, and therefore are slow in their progress, rarely producing true matter, but a mucus, something resembling slime, which lies flat upon the bone. This circumstance makes it difficult to determine when suppuration has taken place, and in many cases to detect matter, even where it is formed. Another circumstance which renders the presence of matter in such cases doubtful, is, that the progress of the disease is generally checked very early by the use of mercury. This matter is often reabsorbed during a mercurial course, and it is proper, particularly in an early state of the complaint, to give it this chance; but if the absorption does not take place, and the complaint is in an advanced state, it must be opened.

The surgical treatment of the parts under such circumstances is the same as in other diseases of these parts; opening with great freedom is absolutely necessary; for the more parts are exposed, the more inclinable they are in general to heal, and still more so here; for violence assists in destroying the venereal disposition. No skin covering a bone should be removed from an abscess, especially in the lower extremities.

If the abscess is opened freely, and an exfoliation takes place, which is generally the case, it is to be treated as any other exfoliation. Exfoliations succeed much better here than in many other cases, because the disease from which they proceed can generally be corrected, which is not the case in many diseases of bones where exfoliation takes place. Cases, however, sometimes occur, in which, after the venereal disposition has been corrected, another disease takes place in the bone, the nature of which will be explained when we shall consider the effects remaining after the disease is cured, and the diseases sometimes produced by the cure.

§ 9. *Of Nodes on Tendons, Ligaments, and Fasciæ.*

The observations made on the nodes of the periosteum and bones are applicable to swellings and suppurations of the ligaments and

fasciæ; but it is still more difficult to ascertain the presence of matter in them than in the former.

When a thickening only of the ligaments or fasciæ is the consequence of the disease, it is very obstinate, as in many cases the diseased part may be cleared of all venereal taint and still the swellings remain. Blisters may often be applied here with success; but if they fail, then it will be absolutely necessary to make an incision into the part, to excite a more vigorous action; for although the complaint has nothing venereal in it, nor is any contamination to be feared from it in future, yet as it leaves often very obstinate and disagreeable swellings, which neither give way to medicine nor time, it is proper to use every means for their removal.

§ 10. *Of Correcting some of the Effects of Mercury.*

Formerly, when the management of mercury was not so well understood, nor its effects in this disease so well known as they are at present, it was generally supposed to act by evacuation from the salivary glands, and was therefore always given till that evacuation took place; and, as its effects in the cure were imagined to be in proportion to the quantity of this evacuation, it was pushed as far as possible without endangering suffocation. From this treatment, it often happened in constitutions which were very susceptible of the mercurial irritation, and in which the medicine produced much more violent effects on some particular secretions than could be wished, that recourse was obliged to be had to medicines correcting the effects of mercury, as these effects were often a hindrance to its being given in sufficient quantities for the cure of the disease.

I mentioned, when treating of the effects of mercury, that the sensible increase of the secretions produced by it were in the following order: first of saliva, then sweat, then urine, and often of the mucus of the intestines, producing purging; I also observed, that when any of those secretions became too violent, the hand of the surgeon was tied up till they were moderated. Attempts have been made to lessen those effects in two ways, either by the destruction of its power on the body in general, or by its removal, but neither of these means has succeeded. It never has once been thought necessary to attempt to lessen its powers on the organs of secretion, so as still to retain the same quantity in the constitution, or even to throw in more, which, if it could be effected, would be sometimes of great service; but as we are not yet acquainted with powers sufficient for these purposes, we are obliged to observe great caution in our mode of giving the medicine.

I have endeavored to show that this medicine need not be given with a view to procure those evacuations, and that it may be given in any quantity without increasing either of those secretions in any evident degree; however, after every precaution we may still be deceived, and the medicine will every now and then produce greater effects than were intended. It is very necessary, therefore, to seek for a preventive of the effects of mercury, when likely to be too violent; or to remedy those effects when they have already taken place.

The common practice, when mercury produced violent effects upon the intestines, was to counteract these effects; but this was not done with a view to retain the mercury in the constitution, but to relieve the bowels that were suffering by the action of the medicine; whereas, the proper practice would be to stop its progress here, as in every other outlet, that more mercury may be retained in the constitution.

Although these increased secretions arise from the constitution's being loaded with mercury, yet there is no danger in stopping them, for they do not arise from an universal disposition becoming a local or critical one; and therefore, if such an action be checked or stopped in one place, it must necessarily fall upon some other; but it is from the part being more susceptible of this irritation than any other, and the quantity now in the constitution being equal to the susceptibility of the part; and, therefore, though its effects are stopped here, it does not break out anywhere else, every other part being capable of supporting this quantity, and of remaining unaffected till more is thrown in.

When the mercury attacked the salivary glands, it increased that secretion so much as in some cases to oblige practitioners to administer such medicines as were thought likely to remove this new complaint. This susceptibility of the glands of the mouth, and the mouth in general, to be easily put into action by this medicine, was generally supposed to arise from a scorbutic constitution, to which most complaints of the mouth are attributed. I am of opinion that scrofulous people, and those of a lax and delicate habit, are more subject to have it fall on the mouth than those of a contrary temperament.

Purges were given upon a supposition that mercury could be carried off by the evacuation produced by them, and they were repeated according to the violence of the effects of the medicine and the strength of the patient; but I can hardly say that I ever have seen the effects of mercury upon the mouth lessened by purging, whether it arose spontaneously, was produced by purging medicines, or even when arising from the mercury itself. As this method was not found sufficient for the removal of the complaint, other medicines were tried; sulphur was supposed to be a specific for the removal of the effect of mercury. Whether this idea arose from practice or reasoning is not material,¹ but I think I have seen good effects from it in some cases. If we can suppose purging of any service, purging with sulphur would answer best, as it would exert its effects both as a purge and a specific.

Sulphur certainly enters the circulation as sulphur, because our sweat and urine smell of it; if it does not combine with the mercury, and destroy its properties as mercury, it is possible, agreeably to the opinion of those who first thought of giving it with this intention, that it may so combine as to form æthiops mineral, or something similar, for we know that the æthiops mineral, however formed, does not in general salivate. It is possible, too, that sulphur may act as a contrary stimulus to mercury, by counteracting the effects of it in the

¹ Sulphur, united with any of the metals, probably destroys their solubility in the juices, or at least their effects in the circulation; none of the cinnabars act either as sulphur or mercury. Crude antimony, which is regulus and sulphur, has no effect. Arsenic, where joined with sulphur, has no effect; nor has iron.

constitution. Sulphur has even been supposed to hinder the mercury from entering the circulation. Upon the whole, as these preparations of sulphur and mercury are still supposed to have good effects, and as I think I have seen good effects in other cases, we must either allow that they enter the circulation or that their whole effects are on the stomach and intestines, with which the rest of the body sympathizes. The good effects from sulphur in lessening or altering the immediate effects of mercury can only take place when that medicine is really in the constitution; therefore a distinction is to be made between such as arise immediately from mercury and one continued from habit after the mercury has been evacuated from the constitution; a case that sometimes happens, and which will be taken notice of in its proper place.¹

The taste in the mouth, from the use of mercury, has been known to go off, and not be perceived for a fortnight, and the same taste has recurred; this, I am informed, has happened twice to one gentleman, from the first quantity of mercury taken. To account for this is not easy; in whatever way it happens, it is a curious fact.

When the mercury has fallen upon the mouth and throat, washing those parts with opium has often good effects; for opium takes off irritability, and of course the soreness, which is one means of lessening the secretion. A drachm of tinctura thebaica to an ounce of water makes a good wash or gargle.²

When the mercury falls upon the skin, it is neither so disagreeable nor so dangerous as when it falls upon the mouth; however, it may often happen that it will be proper to check such a discharge, both upon account of its being troublesome and of its lessening the effects of the medicine in the constitution by carrying it off. The bark is, perhaps, one of the best correctors of this increased secretion.

When the medicine attacks the kidneys and increases the secretion of those glands, it is not so troublesome as when it produces sweating, though it is possible that it may carry off the mercury too soon; but, as we have but few medicines that can lessen that secretion, in most cases it must be allowed to go on. The bark may in such cases be given with advantage.

When the mercury falls upon the bowels, it proves often more dangerous and troublesome than in any of the former cases, especially the last two; but it is, perhaps, most in our power to prevent or palliate. Opium should be given in such quantities as to overcome the complaint, and I believe will seldom fail of removing all the symptoms.³

¹ Nitric acid has far more power than any other medicine in checking and curing soreness of the gums and ptyalism.—G. G. B.

² My using opium in this way was from analogy. Finding that opium quieted the bowels when a purging came on in consequence of mercury, I tried it by way of gargle to the mouth, and found good effects from it, but not equal to those which it produced in the bowels.

³ Opium will often prevent the occurrence of disorder of the bowels from mercury; but, when dysenterical symptoms are actually present, it will seldom remove them unless it be preceded by a purgative.—G. G. B.

§ 11. *Of the Form of the different Preparations of Mercury when in the Circulation.*

It would appear from reason, and many circumstances, that mercury must be in a state of solution in the juices of the body before it can act upon the venereal disease, and indeed before it can act upon any other disease. That mercury is in a state of solution in our juices, and not in a state of any preparation of mercury that we know of, is very probable from the following facts:—

First. Crude mercury, every salt of mercury, and calx of mercury, is soluble in the spittle, when taken into the mouth, by which means it is rendered sensible to the taste; from thence it must appear that it is capable of solution in some of our juices.

Secondly. Crude mercury, when divided into small parts by gum Arabic, &c., so as to be easier of solution when taken into the stomach, generally purges; but crude mercury, taken without such division, has no such powers, not being so readily dissolved in the juices of the stomach. The simple calx of mercury has the same effects, purging, and much more violently, from being, I suppose, readier of solution in the animal juices; for if it only purged from its union with the acid which happened to be in the stomach, it most probably would not purge more than crude mercury; although it is very probable that the calx is easier of solution in a weak acid than even the crude mercury.

Thirdly. Every preparation of mercury producing the same effect in the mouth, and also having one and the same effect in the constitution, shows that they must all undergo a change by which they are reduced to one particular form. We cannot say what that form is, whether it is the calx, the metal, or any other that we are acquainted with; but it is probable that it is not any of them, but a new solution in the animal juices peculiar to the animal itself. This is rendered still more probable by this circumstance, that every preparation of mercury put into the mouth undergoes the same change, and the spittle has the same taste from every one of them. If every different preparation of mercury had the same properties in the constitution that it possesses out of it, which we must suppose if it enters and continues in the same form, in that case the venereal poison must be eradicated in as many different ways as there are preparations. Crude mercury would act mechanically by increasing the weight and momentum of the blood; the calx would act like brickdust, or any other powder that is heavy; the red precipitate would stimulate by chemical properties in one way, while the corrosive sublimate would act in another, and the mercurius flavus in a third; this last would most probably vomit, as ipecacuanha does, which vomits whether thrown into the stomach or circulation.

Fourthly, all the preparations of mercury, when locally applied, act always in one way, that is, as mercury; but some have also another mode of action, which is chemical, and which is according to the specific nature of the preparation. The red precipitate is a preparation of this kind, and acts in both these ways; it is either a stimulant or an escharotic.

To ascertain whether this opinion of mercury being in solution in our juices was just, I made the following experiments upon myself. I put some crude mercury into my mouth, as a standard, and let it stay there, working it about, so as to render it easier of solution, till I tasted it sensibly; I then put into my mouth the mercurius calcinatus, and let it remain till I perceived the taste of it, which was exactly the same; but I observed that it was easier of solution than the crude mercury. I tried calomel in the same way, and also corrosive sublimate, after being diluted with the water, and the taste was still the same. It was some time before I perceived the taste of the crude mercury in my mouth. I tasted the calx and calomel much sooner. The corrosive sublimate had at first a mixed taste, but when the acid was diluted it had exactly the same taste with the former; all of these different preparations producing the same sensation or taste in the mouth.

From the effects of these experiments it would appear that the mercury in every one of them was dissolved in the spittle, and reduced to the same preparation or solution.

To try whether mercury in the constitution would produce the same taste in the mouth, I rubbed in mercurial ointment upon my thighs till my mouth was affected, and I could plainly taste the mercury; and, as far as I could rely upon my memory, the taste was exactly the same as in the former experiments.

I allowed some time for my mouth to get perfectly well and free from the taste; I then took calomel in pills till it was affected again in the same way. I afterwards took mercurius calcinatus, and also corrosive sublimate. All these experiments were attended with the same result; the mercury in every form producing the same taste, which was also exactly the same as when the several preparations were put into the mouth.

From the above experiments it must appear, that when mercury produces evacuation by the mouth it certainly goes off in that discharge; and from thence we may reasonably conclude, that when other evacuations are produced from the medicine when in the constitution, as purging, sweating, or an increased flow of urine, that it also goes off by these evacuations, which become outlets to the mercury.

From the above experiments it appears to be immaterial what preparation of mercury is used in the cure of this disease, provided it is of easy solution in our juices, the preparations easiest of solution being always the best.

§ 12. *Of the Operation of Mercury on the Poison.*

Mercury may be supposed to act in three different ways in curing the venereal disease. First, it may unite with the poison chemically, and decompose it, by which means its powers of irritation may be destroyed; secondly, it may carry it out of the constitution by evacuation; or, thirdly, it may produce an irritation in the constitution which counteracts the venereal and entirely destroys it.

It has been supposed that mercury acts simply by its weight in the circulating fluids, but of this we can form no adequate idea; and if it

were so, other substances should act on this disease in proportion to their weight, and of course many of them should cure it. But from experience we find that such bodies as have considerable weight, as most of the metals, have no effect on this disease. We have no proof of mercury acting by a decomposition of the poison from any of the concomitant circumstances.

Mercury certainly does not cure the venereal disease by uniting with the poison and producing an evacuation. For in those cases where mercury is given in such a way as to produce considerable evacuations, or in those constitutions where evacuations are easily excited by mercury, its effects upon the diseased action are the least; and the same evacuations produced by any other means have not the least effect on the disease.

Whether the mercury be supposed to carry off the circulating poison or to decompose it, in neither way could it produce, when locally applied, any effect on a venereal inflammation or sore arising from the constitution; for as long as any of the poison existed in the circulation, none of them could be healed by local applications, the circulation constantly carrying the poison to them; but we find the contrary of this to be true, for a venereal sore arising from the constitution may be cured locally.

The last or third of our modes of action of mercury seems to me the most probable, and for many reasons. First, because the disease can in many cases be cured by raising a violent stimulus of another kind; and perhaps, if we could raise such a constitutional irritation without danger, as we often can in local cases, we might cure the venereal disease in the same manner, and in one quarter of the usual time. Secondly, we find that mercury acts as an universal stimulus, causing great irritability in the constitution, making the heart beat faster, and rendering the arteries more rigid, so as to produce a hard pulse, as has been already observed. It may farther be said to produce a disease, or a peculiar or unnatural mode of action, in a certain degree. The following case will illustrate this. A gentleman had electricity recommended to him for some complaint he had. The electricity was applied, but without any visible effect. Besides the complaint for which he used electricity, he had a venereal one, for which he was first put under a course of mercury, and while under it the electricity was applied for the former complaint; but he had become so irritable that he could not bear the shocks of one half their former strength. But the most curious part of the case was that the shocks had a much greater effect on the disease than what they had before when twice as strong, and he now got cured. This gave the surgeon a hint; and having another occasion to use electricity, also without effect, he put the patient under a gentle course of mercury, and then found the same effects from the electricity as in the former case, and the patient also got well.

The powers of mercury upon the constitution appear to be as the quantity of mercury and the susceptibility of the constitution to be affected with it, without any relation to the disease itself; and we find that the power of mercury upon the disease is nearly in the same proportion. This fact gives us an idea of the irritation of mercury upon

the constitution, and consequently an idea of administering it, and of the cure of any disease for which it is a remedy.

As we find that a given quantity of mercury produces double effects in some constitutions to what it does in others; also, that in those cases it produces its effects upon the disease, we are led to believe that it is this effect upon the constitution which cures the disease; and, therefore, if it did not produce this effect it would also not have performed a cure. I have already observed that the cure does not go on exactly in proportion to the visible effects upon the constitution, except quantity in the medicine is joined with it, which, if true, would incline us to believe that there was something more than simply a constitutional stimulus, which most probably is a peculiar specific effect which is not regulated entirely by its visible effects, either constitutional or local, although they appear to have some connection.

This fact being known, obliges us to be more liberal in giving mercury in those constitutions where it makes but little impression, than in those which it easily irritates; although in these last we must not be entirely regulated by its local effects, nor depend upon a commonly sufficient quantity, but be ruled by the sensibility of the constitution and quantity joined; for in those where the constitution appears to be very susceptible of the mercurial irritation, where small quantities produce considerable local effects, it is still necessary to have quantity, although it is not so necessary to take the quantity in general that is supposed to be sufficient. We must be guided by the three following circumstances: the disappearance of the disease, the quantity of irritation produced, and the quantity of the medicine taken.

§ 13. *Of Gum Guaiacum and Radix Sarsaparillæ in the Venereal Disease.*

I have hitherto only recommended mercury in the cure of the venereal disease, and, indeed, it is the only medicine to be depended upon. However, as both the guaiacum and sarsaparilla have been recommended as powerful remedies in this complaint, I took a favorable opportunity of trying their comparative powers in the venereal disease upon the same person.

The guaiacum,¹ I found, had considerable specific power over the disease; consequently it may be of service in slight cases, where it may be inconvenient or improper to give mercury on account of some other disease. These cases, however, I have not yet ascertained; or it may be given in those cases where it is apprehended that the quantity of mercury necessary to subdue the disease would be too much for the constitution to bear, cases which sometimes occur. The sarsaparilla appeared to have no effect at all.

I shall relate exactly the case in which their comparative powers were tried. A man came into St. George's Hospital with venereal sores over almost his whole body; there were many excrescent sores

¹ The lignum guaiaci was imported by the Spaniards from Hispaniola, as a cure for the venereal disease, in the year 1517, having been given to one of them by a native.

in the armpits, some of which were about the size of a half-penny; there were the same appearances about the anus, between the buttocks, along the perineum, between the scrotum and thigh, where those parts come in contact with one another. Those upon the skin in general had the common appearance. I ordered a poultice of the gum guaiacum to be applied to the sores in the right armpit; also a poultice of a strong decoction of sarsaparilla and oatmeal, mixed, to be applied to the left armpit. These poultices were changed every day for a fortnight; the excrescent sores in the armpit were entirely healed, and become even with the skin, and covered with a natural skin, although somewhat discolored; the sores in the left armpit, which were poulticed with sarsaparilla, were rather worse than when the poultice was first applied, as, indeed, were all the sores, except those in the right armpit. I then ordered the poultice of guaiacum to be applied to the left armpit, which was done, and the sores there also got well in a fortnight. I was now perfectly convinced that the gum guaiacum had cured these eruptions locally.

I next wished to see what effect the gum guaiacum would have upon the remaining sores when given internally; that is, those about the anus, scrotum, and on the skin in general. The patient began with half a drachm three times every day, which purged him; but this was prevented by joining it with opium. In about four weeks all the eruptions were cured, and he was allowed to stay in the hospital some time longer, to see if he would continue well; but about a fortnight after, he began to break out anew, and in a very short time was almost as bad as ever. I began a second time the gum guaiacum internally, but it had lost its powers, or rather the constitution was no longer affected by it. He was put under a course of mercury and cured.¹

[RECORD.—In Hunter's general observations on the treatment of constitutional syphilis, there are some points which deserve particular attention, and others which cannot be allowed to pass, if not without refutation, at least without commentary.

In the first place, allow me to call attention to the marked difference which Hunter establishes between the curative effects of mercury in the different forms of venereal disease; a difference which is so true and so important, and from an ignorance of which have arisen so many scientific controversies, so many opposite prejudices, so many false doctrines; and above all, and what is a thousand times worse than all, so many sad consequences for the victims of absolute systems.

Mercury, the action of which is so favorable in the treatment of indurated chancres, and which is so powerful a remedy for secondary symptoms, has no curative effect upon gonorrhoea, and loses its efficacy, if it be not positively injurious, in the tertiary symptoms of syphilis. Hunter was well aware of these truths, which experience teaches to all who will hear her lessons with an unprejudiced mind.

¹ For a detailed examination into the use of these and other remedies in the venereal disease, the reader is referred to "Observations on the Effects of various Articles of the Materia Medica in the Cure of Lues Venerea," by John Pearson, a work which contains the result of a long and extensive experience, chiefly devoted to the investigation of this particular subject, and is in every part replete with excellent practical remarks.—G. G. B.

But though these truths are fundamental, we cannot receive as such the propositions which Hunter would establish relative to the comparative ease of curing gonorrhœa, chancre, and constitutional syphilis. In the first place, as regards gonorrhœa, laying aside the cases in which the discharge is symptomatic of a concealed chancre, and which come entirely under the head of chancres, no parallel can be drawn between the two diseases, since, as I have already proved, gonorrhœa has nothing in common with syphilis.¹

With regard to chancre and constitutional syphilis, is it indeed possible, when all the ravages which the latter is capable of producing are known, to admit as a general rule that it is more easily and certainly cured than chancres are? Even Hunter's theory on the production of constitutional symptoms will not justify this proposition. Though, in some cases, certain secondary symptoms disappear sooner than certain forms of chancre, there are quite as many chancres which get well a hundred times sooner than many secondary symptoms; the latter not being always cured at will. Moreover, in treating syphilis, there are two very distinct things to be considered; first, the cure of the existing symptoms; and secondly, the destruction of the diathesis, or at least the complete neutralization of the disposition which certain organs and certain tissues have acquired; and in virtue of which, according to Hunter's theory, fresh symptoms subsequently appear.

Admitting, then, these two distinct conditions, the primary symptom or chancre has undoubtedly the advantage. In spite of all the prejudices which still faintly prolong the contest, and in spite of the superannuated ideas which are vainly thrown in the way of progress, when it shall be once admitted that a chancre at its outset is a local affection, which requires a certain time to infect the economy, and when the effort shall be generally made to destroy it before it can produce constitutional effects, by attacking it as soon as possible with all rational means, then will its cure be recognized as more easy, rapid, and complete, than that of all other syphilitic symptoms.

Hunter says that when complications occur in the course of gonorrhœa, the former should occupy our attention rather than the original disease, which may get well of itself; while, in cases of chancre and secondary syphilis, which never get well spontaneously, we should insist on the use of mercury in spite of everything. This view of the subject is too contrary to the laws recognized by Hunter himself to allow it to pass without refutation. It is now conclusively proved that there are as many chancres which heal of themselves without mercury as there are gonorrhœas that get well without treatment, and that some secondary symptoms will disappear without medicine, or can be cured, at least in the sense that Hunter meant, without mercurial treatment. Having established these facts—and I do not think

¹ The remarkable work of M. Baumès (*Précis Théorique et Pratique des Maladies Vénériennes*, Lyons, 1840, 2 vols. in-8), confirmatory of most of the doctrinal points which I establish or maintain, has added weight to my convictions on those which appeared contradictory to the learned author, to whom I am happy to render the justice due to the impartiality and sincerity with which he has collected his observations, though the latter are to my mind susceptible of a different explanation.

that a single observer can call them in question—the treatment of chancres and constitutional syphilitic symptoms must be included under those rules which Hunter laid down for the treatment of gonorrhœa. If complications exist, they must be met according to their degree of importance. If mercury be indicated for the principal affection, and the complications do not counter-indicate it, it should be administered. But beware, unless you wish to do harm, of always obeying one indication alone, that which requires mercury, in a disease which is so often complex as syphilis is. Up to the present time, mercury has doubtless been the most energetic remedy in the therapeutics of syphilis, but it is not the only remedy for this disease. Though it be often indispensable and without a substitute, yet there are some cases in which we can do without it, others in which we ought to abstain from it, and still more numerous cases in which it is only one among various means which should be employed to conduct the patient to a perfect cure.

Whether, in those cases to which it is applicable, mercury acts radically and independently of the form in which it is administered, and whether it always passes into the state of a bichloride, as M. Mialhe asserts, or not, it is none the less true that the form of its administration is not immaterial, and that a person who is refractory to one form of mercury will be too strongly affected by another, and will receive no medicinal or curative effect, except from the particular one which is best adapted to his constitution. For example, the skin in all patients is not affected in the same way by all mercurial ointments. I have often shown patients at the Hôpital des Vénériens, on whom frictions had been made for a long time with large quantities of strong mercurial ointment without any effect, but who subsequently either experienced the curative action of mercury or were salivated, after the application of *Vigo cum mercurio* plaster for four or five days over a certain portion of the skin, as for example the two thighs. The same is true of mercury given internally; one preparation has no effect on a patient, another has a morbid action, and it is only by a skilful selection in each individual case that we can obtain a preparation that, suitably administered, will effect a cure.

I have elsewhere drawn up in a concise manner the rules which I follow in administering mercury, and I will repeat them in this place.

1. Give mercury internally, whenever the state of the digestive organs permits.
2. Apply it to the skin in contrary cases.
3. When the mucous passages are irritated too soon, and the skin, equally irritable, will not allow of a complete course of external treatment, the two methods should be judiciously alternated.
4. Some patients cannot be reached either by the skin or the digestive passages, but are favorably affected by the inhalation of mercurial vapors, which, in a multitude of cases, are perhaps too much neglected.
5. It is rarely necessary to wait longer than a week to perceive the effects of mercury, either as a morbid or curative agent; and so long as no favorable change is produced in the disease, the daily dose of the

remedy should be increased every week, unless some supervening symptom contra-indicate it.

6. As soon as a change for the better is obtained, we should stop at the quantity which produced it, and only increase it when the disease arrives at a *status quo*.

7. If mercury produce any unpleasant symptoms, the mode of using it should be modified, or it should be entirely suspended, experience in such cases having proved, with a few rare exceptions, that, even if the syphilitic symptoms be not always aggravated, the cure at least is almost invariably retarded.

8. When the mercurial symptoms have subsided and the syphilitic symptoms still remain, mercury should be resumed with such modifications as the peculiar nature of the former require, as regards the surface to which it is applied, the form in which it is administered, or the quantity employed.

9. The same inconveniences do not always reappear on resuming the remedy after suspending or simply modifying it. It sometimes happens, as Hunter observes, that we are obliged to suspend and resume mercury several times in the course of certain syphilitic affections.

We should beware of accepting literally Hunter's proposition relative to the quantity of mercury to be introduced into the system, which, he states, should be proportioned to the *violence of the disease*. The disease, as we have seen, may be violent in different ways, either from its acuteness, from the complications which aggravate it, from the multiplicity of the symptoms which it excites at the same time or successively, from the parts which it affects, or finally from its obstinacy and resistance to therapeutic agents. One and the same rule cannot be followed under all these different circumstances, for there are a multitude of indications to fulfil, and, far from administering mercury in proportion to the violence of the disease, we must often limit its quantity or entirely suspend it. But whenever mercury is administered to a patient, and there is no contra-indication, it should be known that its effects are the more efficacious, in the larger doses it is given. For this purpose, the relative tolerance of patients under mercury should be measured by the rules which we have laid down, and the necessary quantity should be determined only by its curative action on the syphilitic symptoms; any quantity which leaves them *in statu quo*, or which allows them to increase, being insufficient, and any quantity which surpasses a curative action and produces morbid mercurial effects being too much.—RICORD.]

[EDITOR.—As long as any symptoms of constitutional syphilis remain, we have a guide as to the quantity of mercury to be given in the effect of the remedy upon such symptoms. Any dose which produces an amelioration in the symptoms is sufficient; if no improvement be manifest, the dose is to be increased.

But after the disappearance of all syphilitic manifestations, we are still to continue our treatment for some time, as a prophylactic; and what are we then to take as a guide as to the quantity of the remedy to be administered,

and the frequency of its repetition? The best indication under these circumstances, that the system is fully under the influence of mercury, will be found in the condition of the gums. As soon as any irritation of the gums is produced, decrease slightly the dose of the mercurial, so as to avoid salivation; continue this quantity for several weeks, and then carefully try the effect of increasing it, for it generally happens that the system becomes habituated to the drug, and will support a dose which previously salivated. By a succession of such experiments on the power of the system to support the mercurial, and constantly giving as large doses as can be borne without salivating, we are sure of attaining the full effect of the remedy.

Mercury exerts its greatest effect upon early constitutional symptoms. Its curative action gradually diminishes, the more distant the symptom from the period of infection; until finally in tertiary syphilis iodide of potassium supplies its place, and is to be relied on for a cure of the disease. This salt may indeed be called a specific for tertiary syphilis.

But, in addition to its marked action in this form of syphilis, it also exerts a prophylactic effect against any future manifestations. Hence no treatment of constitutional syphilis should be considered complete unless the administration of mercury has been followed by that of iodide of potassium. In this way alone can we provide for the future, and hope to prevent any late manifestations of the acquired diathesis.

It remains to determine for what length of time this combined treatment should be continued in order to insure the greatest probability of no farther symptoms occurring. No treatment continued for any length of time will afford *certain* immunity; all we can do is to render immunity *probable*. To stop treatment as soon as all syphilitic symptoms have disappeared, is to leave our patient with almost a certainty of their return. To continue treatment for as long a time after, as has been required to obtain their disappearance, is also an unsatisfactory rule. In many cases it would be too short a time, in others too long. Clinical observation of a large number of cases can alone furnish us with the best guide; and Ricord, from his extensive experience, comes to the following conclusion: "Six months of treatment by mercury, in such daily doses as to exert a curative action on the symptoms as long as they remain, and after their disappearance to show by its physiological effects that it is still acting on the system; afterwards, three months of treatment by iodide of potassium, in order to prevent any late manifestations of the diathesis; such is the mode and length of treatment which has been found to be most successful, and which, in the great majority of cases, neutralizes, as it were, the syphilitic poison. It is to be understood, however, that this rule is frequently to be modified to suit the circumstances of individual cases." Ricord, *Leçons sur le Chancre*, p. 216, *et seq.*—EDITOR.]

[RICORD.—Whatever theory be adopted with regard to the mode of the curative action of mercury—and each school gives its own explanation—it is very certain that syphilis is never cured by the exaggera-

tion of any of its effects, as fever, increase of the urinary secretion, alvine evacuations, cutaneous irritation or salivation. On this point Hunter agrees with the majority of good observers; and, to mention only one of its effects, I will observe that the method of treatment by extinction, so called, is at the present day universally preferred to the old and defective method by salivation.

It is proper in this place to add a few words to what Hunter says of salivation, a peculiar and common effect of mercurials, which deserves special attention, since it must be regarded as a complication interfering with treatment, and often obliging us to suspend it.

Mercurial salivation is very rare previous to the first dentition, mercury acting at this age rather on the digestive passages or on the skin. It is easily produced in women, in lymphatic temperaments, in scrofulous subjects, and especially in those of a scorbutic predisposition—in all persons, in fine, whose blood is deficient in plasticity. Habitual constipation and a foul state of the mouth (want of cleanliness or carious teeth) predispose to it in a remarkable degree. Very high and very low temperatures have the same effect, especially when encountered suddenly.

The soluble preparations of mercury do not determine it so soon as the insoluble.

The quantity of mercury necessary to produce salivation depends on the individual.

Salivation usually occurs during the first week of the administration of a uniform quantity of a mercurial preparation; but it may appear within twenty-four or forty-eight hours, though it is generally after the fifth day. Whenever the quantity given daily is increased, salivation, though previously absent, may appear; but it is very certain that patients are most susceptible to it at the commencement of treatment, and that, in general, the farther they progress in the treatment, the less salivation is to be feared.

When salivation has not occurred eight or ten days after stopping mercurial treatment it is no longer to be feared, and the cases of late salivation, reported by authors, especially those supposed to occur after an interval of a year, should be referred to simple ulcerous stomatitis, which is so common and so easily mistaken for mercurial stomatitis.

Mercurial salivation, mercurial ptyalism or mercurial stomatitis does not commence in the salivary glands; these are at first only sympathetically affected, as shown by pathological anatomy. An increase in the salivary secretion may be the first thing which excites the attention of the physician and patient; but the first part materially affected is the mucous membrane of the mouth. This membrane becomes tumefied in whole or in part, and the swelling partakes of the nature both of erysipelas and oedema. The patient has an uneasy feeling about his mouth, a sensation of heat and a coppery taste; the teeth are raised in the alveoli, rendered movable, and seem separated from each other by the interposition of a foreign body; patients think them longer than usual, and that thus the dental arches come together sooner when the jaws are closed; the tongue becomes swollen, sometimes to such a degree as to overlap the dental arches and protrude between the lips,

bearing the impression of the teeth; the cheeks and the lips are also swollen, and their lining, mucous membrane, soon forms a projecting ridge corresponding to the interval between the jaws. The more intense these symptoms are, the more the saliva, which escapes involuntarily, becomes abundant, viscous, and has a mercurial odor,¹ a kind of metallic fetid smell, which simple inflammations of the mouth sometimes present to a certain degree, but which is here very marked, and may be detected in the patient's breath before ptyalism has occurred.

Meanwhile, wherever the swollen mucous membrane is subjected to any pressure, a kind of pseudo-membranous exudation takes place, of a whitish or grayish color, and is especially marked around the necks of the teeth, where it resembles a festoon. This is succeeded by ulcerations which sometimes bleed readily, and which, in most cases, appear to be the result of the combined action of gangrene and diphtheritic inflammation. Again, the progress of the disease may be such that the tongue is mortified in whole or in part, or the mucous membrane of the cheeks more or less completely destroyed, so as to prevent the necessary opening of the mouth after cicatrization has taken place; the cheeks may be completely perforated, the teeth detached, and even the jaws affected with caries and necrosis.

Still, except from blind adherence to a system, unpardonable at the present day, gross ignorance in the treatment, or idiosyncrasies which are fortunately rare, serious cases of mercurial stomatitis are so uncommon that I am scarcely able to show an instance of it each season at my clinique, at the Hôpital des Vénériens. Mercurial stomatitis is usually partial, at least when it is first detected, and may then be arrested in its progress.

In order of frequency, the lower jaw is first affected, and commonly the mucous membrane situated behind the wisdom tooth, especially when this tooth is badly set or crowded, and above all, when it is not fully grown; the upper jaw is next in order, especially the part behind the middle incisors; the border of the tongue, the cheeks, and the internal surface of the lips, are generally involved later; the velum palati and the pillars of the isthmus of the fauces seem to be the limit beyond which the disease never passes in ordinary cases. An observation which I have made repeatedly, and which I submit to others to verify, is that mercurial stomatitis, other things being equal, is developed especially on the side on which the patient is in the habit of lying.

Mercurial stomatitis is rarely ushered in by fever, the first symptoms, as I have said, being confined to the mouth; but, though fever may be absent during the whole course of this affection, yet it sometimes attends it, especially in its severer forms, and may survive it under the hectic type, when the patients have suffered severely and for a long time. To the impairment of the functions of the mouth and tongue, the pain which the patients suffer, and their want of sleep, other symptoms are often added, such as cedema, erysipelas of the face,

¹ Some curious and important researches of M. Gmelin (*L'Experience, Journal de Médecine*, Paris, 1837, No. 11) prove that mercury is found, in substance, in the saliva of persons affected with ptyalism after using this metal. I have, however, had these experiments repeated without success.

swellings of the neighboring lymphatic ganglia, gastro-intestinal affections, cedema of the glottis, and all the direct or sympathetic consequences of these complications.

The course of mercurial stomatitis is generally acute, and it attains its maximum intensity in a few days; but it may assume a chronic type, and last an unlimited time, either when the use of mercury is continued, or when, abandoned to itself, it is kept up by accessory causes, as a scorbutic disposition, which may have previously existed or have been excited by it. But in ordinary cases, when the cause is removed and suitable treatment applied, it is rare for it to last beyond a few weeks, and it is generally arrested in a few days.

Mercurial stomatitis often terminates in speedy resolution, but generally ulcerations occur, and sometimes gangrene. Death may ensue from the progress of the mortification, the exhaustion of the patient from suppuration and loss of saliva, from the almost absolute impossibility in some cases of administering food, etc., but it is fortunately very rare.

The diagnosis of mercurial stomatitis is almost always easy. In the first place, when the symptoms above described appear during a course of mercury, or soon after, it is rational to refer the former to the latter. Again, mercury itself is the best test of mercurial pytalism, this affection growing worse, if the use of the mercury be continued, and soon disappearing if it be stopped. Though some syphilitic symptoms of the mouth may be aggravated by mercury, most of them yield to this powerful remedy, which always increases and never cures the symptoms which it itself has produced. On the other hand, if we take into account the ordinary seat of syphilitic lesions of the mouth and fauces, their more marked outline, their peculiar aspect, their slower and more chronic course, the absence in most cases of that cedematous erysipelatous state of which we have spoken, the induration which often exists to an appreciable degree, and which is very different from the clammy, pitting state of the mucous membrane in mercurial pytalism, the antecedents, the concomitants, the peculiar circumstances in which the symptoms appear, and if, above all, we examine the effects of mercury on the case, we shall always attain, if not to an absolute diagnosis, at least to a rational one, which is sufficient to guide us in the use of mercurials. In cases of aphthæ, or simple ulcerous stomatitis, which are the diseases most easily confounded with salivation, a rigorous diagnosis is not necessary, since these affections, analogous to the effects of mercury, contraindicate this mineral so long as they last.

The treatment of mercurial stomatitis should, above all, be prophylactic; remove predisposing causes, when possible, diminish the quantity of the mercury given, defer its administration till it can be borne, or suspend it entirely; these are the first measures to be taken; cleanliness of the mouth, the use of astringent gargles, and keeping the bowels open, are of the first importance in preventing, or, at least, retarding salivation. But when it has already taken place, the most effective treatment in all its stages, and one which never fails, consists in touching the diseased tissues with pure hydrochloric acid. This should be done once a day, the acid being applied to the mucous

membrane by means of a small brush, avoiding the teeth. Where there are no ulcerations, it produces scarcely any pain; but when the surface is ulcerated, the pain is often very severe, and the parts generally bleed at each application; but this temporary suffering soon subsides and the patients experience such relief that they themselves beg for its renewed application. If the surfaces be not ulcerated, an astringent gargle should be prescribed; in the contrary case, a slightly acid gargle is to be preferred. The best drink for these patients is made of dilute nitric or sulphuric acid. In fulfilling these, the most urgent indications, no others which the individual case demands should be neglected, as derivatives to the lower extremities and intestinal canal, aided especially by laxative or purgative enemata; leeches along the border of the lower jaw; venesection when there is much general reaction; sedatives and opiates, when there is nervous excitement and want of sleep; diet or nourishment proportioned to the general and local state of the patient.¹

I will not, in this place, attempt a history of all the symptoms which mercury may produce; I will only say that the cutaneous affections which it sometimes excites, particularly when applied as a topical agent, are much less frequent, and especially much less severe, than has been asserted. As to hemorrhages, in consequence of its anti-plastic action, they are so rare that, up to the present day, I have never seen an instance. Mercury, doubtless, has a very powerful action on the nervous system, but unpleasant symptoms are certainly not observed with the preparations and the doses in which it is employed in a methodical course of treatment. In my long practice, and among the numerous patients I have treated, I have met with only one case of mercurial tremor, and that was in a ward-tender, who for many years had administered fumigations of cinnabar to the patients at the Hôpital du Midi.

Mercury has been considered to have the power of producing abortion. Granting it this property, rigorously speaking, it is more rational to say that, when wisely employed, it prevents more abortions than it causes.

As to mercurial cachexia, the methodical and more restricted use of mercury, at the present day, renders it more and more rare. Since I have been at the Hôpital du Midi, not a single example of it has been

¹ The best treatment of mercurial stomatitis is the internal administration of chlorate of potash. The dose is from one to two drachms daily, given in divided portions and largely diluted, as this salt is not very soluble.

Prior to some recent experiments of Ricord, some doubt was felt as to the curative action of the chlorate, since the mercury was always suspended at the same time that this treatment was commenced. Ricord, however, has shown that the mercury may be continued or even increased in quantity after salivation has taken place, and yet the unpleasant symptoms will disappear under the use of chlorate of potash. The same may also be used as a prophylactic from the outset of a mercurial course in persons peculiarly susceptible to the action of mercury.

Moreover, Ricord has shown that the concurrent administration of the chlorate does not in any way interfere with the curative action of the mercury on the constitutional symptoms. See *Leçons sur le Chancre*, p. 336. These results have been more recently confirmed by M. Laborde. See *Gaz. des Hôpitaux*, April 24, 1858.—Ed.

seen in my wards, and patients to whom I myself have administered mercury have never been affected with it.

One of the doctrines which have done the most to throw discredit on the mercurial treatment of syphilis, is that according to which this treatment should be the more energetic, the deeper seated and older the symptoms are. I will not repeat what I have said on this subject; but I will observe, in this place, that it is proved to the minds of all unprejudiced observers that, though mercury be one of the most effectual remedies for pure secondary symptoms, its energy is exhausted, and its good effects frequently succeeded by injurious ones, in the treatment of tertiary symptoms. For the latter symptoms, in which syphilis seems to have undergone, if not a complete transformation, at least a profound modification, there are, at the present day, other therapeutic agents which should be preferred.

When tertiary symptoms exist alone, the treatment which has succeeded best in my hands consists in the use of iodide of potassium.

Two scruples a day may be given at first. This quantity is to be taken in three doses in the course of the day, in three glasses of a decoction of sarsaparilla, hops, or saponaria. Fifteen grains should be added every five days to the quantity given daily, until a drachm and a half is taken a day, which I have rarely gone beyond.

Besides its curative effects, iodide of potassium may act on different parts of the economy in a manner which it is perhaps well to mention.

The digestive organs generally tolerate it readily; but, in some cases, patients complain of pain, and an uneasy sensation in the region of the great cul-de-sac of the stomach, sometimes analogous to pleurodynia, but differing from it in being deeper. In certain cases the thirst is augmented, although more generally the appetite alone is increased, and the patients soon become fat. I have rarely observed vomiting and diarrhoea. A very frequent phenomenon is a kind of salivation or ptyalism very analogous to that of pregnant females. It consists in a regurgitation of salty, metallic saliva, which may, to a certain degree, resemble mercurial salivation, since a slight erythematous and oedematous swelling of the gums is met with in some patients; but there is never any ulceration or fetid metallic odor, as in mercurial salivation. Iodide of potassium acts, perhaps, more frequently on the pituitary membrane and conjunctiva. Most patients, at the commencement of this treatment, are attacked with coryza, which is sometimes very acute. At the same time, marked symptoms of catarrho-oedematous ophthalmia are observed with more or less decided chemosis and oedema of the lids. But here, as well as in the coryza, it is rare for a muco-purulent secretion to supervene. I have also seen, but more rarely, symptoms of bronchitis. Certain phenomena may appear on the skin; thus, it is not uncommon to observe an eruption of acne or ecthyma consisting of very small pustules. The urinary passages are much affected in some subjects, and the secretion of urine very much increased. The circulation has not appeared to me to receive any effect worthy of notice, at least in the majority of cases. With regard to the nervous system, some patients experience what has been called iodic intoxication, characterized by a little uncertainty in the voluntary motions,

twitching of the muscles, heaviness of the head, a kind of intellectual sloth, and sometimes slight derangement of the mind. Iodide of potassium has been charged with producing atrophy of the glands, and particularly of the breasts and testes. It is, indeed, one of the most powerful resolvents that I am acquainted with; but it acts only on diseased organs, the atrophy of which it does not always prevent, and may even favor, but it cannot of itself produce it.

These phenomena, however, are always very light, even when the remedy is administered in the extreme quantity which I have mentioned. But their appearance, and especially their tendency to become aggravated, are always to me an indication that I have reached a limit where it is necessary to stop; and, again, whenever one of the symptoms improves, I stop at the quantity of the remedy which produced the amelioration, and increase it, according to the rules already laid down, only when the disease remains *in statu quo*.

When the symptoms have been correctly determined, a marked and decided improvement rarely fails to appear during the second week of the treatment and sometimes sooner. The tubercles are absorbed; the ulcerations become clean; the suppuration diminishes; the osteoepic pains cease, and the osseous tumors, if they be not permanently indurated or eburnated, soon begin to take on resolution.

When, however, symptoms of transition between the secondary and tertiary periods are present, as deep tubercles of the skin and mucous membranes, and when, especially, tertiary symptoms are accompanied by marked secondary symptoms, treatment with iodide of potassium is not sufficient, and mercurials should be added to it. Here, again, with the exception of the cases mentioned, I prefer the proto-iodide of mercury.

In these cases, whichever class of symptoms disappears first, the remedy corresponding to it is omitted, following the rules already established.

Yet in the treatment of secondary and tertiary symptoms as in that of the primary, direct or local applications should not be neglected; if, in the primary symptoms, this be the first indication to fulfil, in the other two orders of symptoms, it is undoubtedly the second.

Whenever any of the cutaneous eruptions are attended with excessive irritation, or more or less decided inflammation, simple, gelatinous or amylaceous baths are very useful; emollient, sedative, or opiated fomentations, and emollient cataplasms should frequently be employed. In asthenic eruptions, simple vapor baths, and especially local or general fumigations of cinnabar are often of great use. When it is desired to make the symptoms disappear rapidly, which is so important for most patients, especially when they are situated on the face, there is perhaps no more efficacious means than the *Emplastrum de Vigo cum mercurio*.

Resolution of the papular and tubercular eruptions of secondary syphilis may be promoted by mercurial ointments, and especially by an ointment of the proto-iodide of mercury; but they sometimes require the use of baths of corrosive sublimate, which are much more efficacious here than in some other syphilitic eruptions.

I have often shown at my clinique the good effects of M. Emery's tar ointment¹ upon squamous syphilitic eruptions, but I do not, however, neglect constitutional mercurial treatment.

But as a powerful local application, and one which gives more rapid cures than any other, we cannot estimate too highly the combined use of the oxychloride of sodium² and calomel in the treatment of mucous papules.

The diseased tissues should be washed twice a day with the oxychloride of sodium either pure or sufficiently diluted with water to excite only a slight smarting sensation, and then be powdered over with calomel. This treatment, continued for eight or ten days, is generally sufficient to produce complete resolution of these eruptions, which often resist other means for months.

When eruptions of this form are situated in the mouth, local applications of the liquid acid nitrate of mercury are to be preferred.

The local treatment of secondary ulcers is but little different from that already directed for primary ulcers. When the reparative stage commences, the best dressing, if the situation of the ulcers permits its application, is with small strips of *Emplastrum de Vigo cum mercurio*.

When the ulcerations are situated in the mouth and throat, we should have recourse to emollient gargles, if inflammation be present; or to opiates, quinia, and hydrochloric acid if there be a tendency to gangrene, as is sometimes observed; but when these ulcerations are indolent, and attended with induration of the tissues, gargles of a decoction of conium and dulcamara, with the addition of one grain of bichloride of mercury to the ounce, should be preferred.

The *velum palati* is sometimes divided by syphilitic ulcers, but, in that case, the state of the tissues often renders the operation impossible, which M. Roux has practised with success in other cases.

The local treatment of syphilitic iritis consists in the application of leeches to the temples, mastoid processes, and *alæ nasi*. In addition to revulsives to the intestinal canal and lower extremities, mercurial frictions should be immediately applied around the orbit, and extract of belladonna may be combined with them, as my learned friend, M. Sichel, does with great success in his practice; or this extract may be applied separately to this region and within the nostrils. As soon as the inflammatory symptoms have subsided, or when they are absent at the outset, we may resort immediately to the application of blisters to the temples or above the orbit; the vesicated surfaces should be dressed with mercurial ointment, and the blisters be renewed as fast as they dry up, until they are no longer necessary.

The other local applications which may be required in this case do not differ from those in use in other severe ophthalmias, but they should be promptly aided by the administration of the proto-iodide of mercury, which I prefer to calomel, and which I combine with belladonna either in the form of the powdered leaves or the extract.

¹ M. Emery's tar ointment consists of one part of tar to three parts of cerate. Unguentum creasoti may be substituted for it, and has not the disadvantage of its dark color.—Ed.

² Labarraque's Disinfecting Liquid.—Ed.

With regard to the treatment of syphilitic sarcocele, besides local mercurial frictions and the application of *Emplastrum de Vigo cum mercurio*, no better application can be made than the methodical compression, of which I have spoken in connection with gonorrhœal epidymitis.

The falling of the beard and hair, and the affections of the nails, accompanying ulcerations and eruptions on the skin, cease under the influence of the remedies already mentioned. But the fresh growth of the hair may be promoted, after shaving the head, by the use of frictions with an ointment of the proto-iodide of mercury, or with Dupuytren's pomade of cantharides,¹ or with light frictions of tincture of cantharides diluted with alcohol.

For the nails, it is generally sufficient to apply the same local treatment as for mucous papules.

If we now pass to the local treatment of tertiary symptoms, we shall see that, in cases of deep tubercles of the skin and mucous membranes attended with inflammation, it is often necessary to have recourse to local antiphlogistics, as emollients, sedatives, and narcotics. But when the tubercles are indolent, as is generally the case, their resolution is often promoted by means of Bielt's formula of honey and the proto-iodide of mercury (one part of proto-iodide of mercury to twelve of honey). Chlorinated lotions, combined with calomel and the *Emplastrum de Vigo cum mercurio*, may also be successful; but one of the most efficacious topical applications, especially when there are ulcerations, is a solution of iodine:—

R.—*Tincturæ iodinii* ℥j;
Aquæ destillatæ ℥iv;
Potassii iodidi, q. s.—M.

In some cases, however, it is necessary to have recourse to cauterizations with the liquid acid nitrate of mercury, or to applications of caustic solutions of corrosive sublimate, sulphate of copper, &c.

Though osteocopic pains sometimes yield to the application of leeches, emollient cataplasms, opiated frictions, &c., yet the mode of treatment which is perhaps the most efficacious and the most speedily followed by relief is by means of blisters. One must witness the results which they produce in the great majority of cases to believe in their marvellous effects. Many times at my clinique at the *Hôpital des Vénériens*, I have shown patients who had been deprived of sleep for entire months, and who, by the use of blisters, were freed from their excruciating pains in twenty-four or forty-eight hours! The blister should be applied over the seat of the pain, and it is unnecessary to detach the epidermis after its removal. The dressing may consist of opiated cerate, covered with an emollient cataplasm. If the pain continue after the blister has dried up, another should be applied.

¹ Formula for Dupuytren's Pomade. (*Formulaire Magistrale*.)

R.—*Medullæ ossium bovis* ℥j;
Plumbi acetatis ℥j;
Balsami Peruviani ℥ij;
Tincturæ cantharidis ℥ss;
 “ *caryophylli*,
 “ *canellæ*, aa gtt. xvj.—M.—Ed.

In some cases, it is necessary to keep up the suppuration, or to make a deep incision, including the periosteum, in the suffering part.

The local treatment of periostitis or periostosis differs but little from that of osteocopic pains. Most commonly, antiphlogistics, emollients, narcotics, and especially blisters, quiet the pain and soon produce resolution of any nodes that may have formed; but in many cases, to obtain this effect, it is necessary, besides the use of blisters, to make applications of mercurial ointment or tincture of iodine diluted with distilled water, gradually increasing their strength so as to slightly cauterize the skin. I have sometimes derived great advantage from a blister and a caustic solution of corrosive sublimate, as mentioned in speaking of the treatment of buboes.

When the disease remains stationary in spite of these means, compression may be employed whenever the situation of the parts permits.

If the periostosis has given rise to suppuration, after having attempted its resolution by appropriate means, we must not wait for the skin over it to become affected and undermined by the pus, and sound portions of the bone to be denuded; but suitable openings should immediately be made with a bistoury.

Commencing osteitis requires the same treatment as osteocopic pains and periostoses. When the tumor is developed, we should rely chiefly on blisters dressed with strong mercurial ointment and the application of poultices.

When suppuration or caries occurs, especially of the bones of the face which are so often necrosed in these cases, we should never fail to remove them so soon as they can be separated from the sound parts. We must recollect that caries engenders caries; that when the organic tissue of a bone has been destroyed by suppuration or has lost its vitality, it cannot be regenerated by any constitutional or local treatment whatsoever, and that its debris should never be left to spontaneous evolution, for they are true foreign bodies, keeping up and extending the suppuration which, involving important parts, may occasion the most serious symptoms, and finally death.

When osteitis has produced exostoses, which have passed into a permanent eburnated state, these tumors should not be operated upon unless they cause excessive deformity, or interfere with important functions.

Deep tubercles of the subcutaneous or submucous cellular tissue require special attention in their local treatment, and the more so because, in some instances, they seem to be the final manifestation of constitutional syphilis, the germ of which may have become extinct.

M. Cullerier, the nephew, has proposed to attack subcutaneous tubercles, like buboes, with a blister and caustic solutions. This method has often been successful in my hands, but in many cases I have had special reason to be satisfied with the extirpation or enucleation of these tubercles, performed before suppuration has taken place, and the neighboring parts have become affected; but when suppuration has already occurred, the pus should be evacuated before it has produced any great ravages. Still, at the present day, it is within the bounds of truth to say, that the methodical administration of iodide of potassium

not only effects the resolution of all tubercles before the suppurative period, but even causes them to be absorbed and disappear when suppuration is already established.

If, as suppuration is taking place, or afterwards, there be symptoms of inflammation, we should resort to antiphlogistics and emollients. When the suppuration is succeeded by foul ulcers, we should make use of digestive ointments, excise the portion of the skin which is too much changed to take part in cicatrization, employ, according to the case, the various dressings already indicated for other ulcerations, and especially applications of tincture of iodine, and, so soon as the reparative stage declares itself, apply small strips of *Emplastrum de Vigo cum mercurio*.

When situated beneath the mucous membranes, and more particularly beneath that of the mouth and pharynx, abortive treatment and enucleation of the tubercles being hardly possible, we should carefully watch for the first appearance of suppuration, open the abscesses promptly, and after satisfying the first indications which require the use of emollients, antiphlogistics, and sedatives, speedily have recourse to gargles of tincture of iodine (a drachm to six ounces of distilled water), gradually increasing the strength till a curative effect be produced.—RICORD.]

CHAPTER IV.

OF THE EFFECTS REMAINING AFTER THE DISEASE IS CURED,
AND OF THE DISEASES SOMETIMES PRODUCED BY THE
CURE.

IN treating of the local effects of the venereal disease, the gonorrhœa, and chancre, as also the bubo, I observed, that after the virus was destroyed there remained in many cases some of the same symptoms, and particularly after the gonorrhœa. It was also observed, that though all the symptoms were entirely cured, yet they were liable to break out again. A gleet will appear, sometimes attended with pain, so as to resemble a gonorrhœa; after chancres there will be sores resembling them; and buboes, after the virus is gone, will not heal, but spread. In the lues venerea the same thing often happens, especially if the inflammation and suppuration have been violent in the parts. These cases puzzle considerably; for it is difficult to say when the venereal virus is absolutely gone. In such doubtful cases, the treatment to be followed becomes more undetermined.

Such complaints are more common in the tonsils than in any other part, for we often find that while a mercurial course is going on, and the ulcer on the tonsils healing, or even healed, they shall swell, become excoriated, and the excoriations shall sometimes spread over the whole *palatum molle*, which renders the nature of the disease doubtful.

I believe these excoriations, as well as such other appearances of disease as come on during the use of mercury, are seldom or never venereal. In all such cases, I would recommend not to continue the mercury longer than what appears sufficient for overcoming the original venereal complaints, not considering those changes in the case as venereal. The bark is often of service here, and may be given either with mercury, or after the mercurial course is over.

It often happens that venereal abscesses will not heal up, although they have gone a certain length towards it, for while the venereal action remained in the part, the mercury disposed that part to heal; but under that course the constitution and part had acquired another disposition, proceeding from a venereal and mercurial irritation affecting a particular habit of body or part, at the time, which new disposition differs from the venereal, mercurial, and natural, being a fourth disposition arising out of all the three. I suspect, however, that it depends chiefly on the constitution, because if it was owing to the other two, we should always have the same disease; and what makes this opinion more probable is, that it differs in different people, at least it is not cured in all by the same means. The constitution being predisposed, the other two become the immediate causes of action. As soon as the venereal irritation is destroyed by the mercury, or becomes weaker than the other two, then the effects of the others take place. While the venereal action prevails, the mercury is of service, and the sore continues healing; but when it is lessened to a certain degree, or destroyed, the mercury not only loses its powers, but becomes a poison to the new disposition that is formed; for if mercury is continued, the sore spreads; it should, therefore, be immediately left off.

Some of the sores formed in this way not only resist all means of cure, but often inflame, ulcerate, and form hard callous bases, so as to put on the appearance of a cancer, and are often supposed really to be so.

We find also that new diseases arise from the mercury alone. The tonsils shall swell where no venereal disease has been before; the periosteum shall thicken, and also probably the bones, and the parts over them shall become cedematous and sore to the touch; but as these complaints arise while under a mercurial course, they are not to be reckoned venereal, but a new disease, although they are too often supposed to be venereal, and on that account the mercury is pushed as far as possible. In such cases, if the complaints for which the mercury was given are nearly cured, and the medicine has been continued a sufficient time after to complete the cure of those complaints, then of course it should be left off; and, if there be any doubt, it should be left off rather sooner than if no such complaint had taken place, because it is probably producing a worse disease than the venereal; and if, after the cure of these complaints from the mercury, the venereal disease begins again to come into action, mercury must be given a second time; and now the constitution will be better able to bear it, especially if attention has been paid to the restoring the strength of it. Those diseases of the tonsils and periosteum I suspect to be of scrofulous origin.

Besides local complaints, arising from the combined action of the mercury, the disease, and the constitution, there is sometimes a constitutional effect, which is a weakness or debility, a languor, want of appetite, frequent sweats threatening hectic; but these happen mostly in those constitutions with which mercury disagrees. These complaints, local as well as constitutional, arise in some measure from weakness. They are difficult of cure, whether arising from a venereal chancre, bubo, or the lues venerea. Strengthening medicines are of most service; the bark is of great use, though in general not sufficient, as it can only more or less remove the weakness, the specific qualities still remaining. What these are is, I believe, not yet known; but I suspect that many partake of the scrofula, and this opinion is strengthened by their frequently giving way to sea-bathing.¹

§ 1. *General Observations on the Medicines usually given for the Cure.*

A decoction of the woods, among which are commonly included guaiacum and sarsaparilla, is one of the first medicines in the cure, and many of the cases yield to it, which gives them the credit of curing the venereal disease, while such diseases were supposed to be venereal. The sarsaparilla was often given alone, and was found to produce nearly the same effect. The good effects of it in one case gave it some reputation.² A diet-drink discovered at Lisbon was also of considerable service, and as it cured cases similar to those cured by the sarsaparilla, it was imagined that the diet-drink consisted principally of a decoction of this root. This was still on the supposition that all those cases were venereal; but it was observed at last that those medicines did not cure this disease till mercury had been given, and in a tolerably large quantity. This was sufficient to lead some thinking minds to doubt whether they were venereal or not; and their being cured by different medicines ought to produce a conviction of their being different from the venereal disease, and that they are themselves of different kinds.

The mezereon has also been found to be of service in some symptoms of the lues venerea, such as nodes of the bones; but their being venereal was taken for granted. The mezereon is seldom given in venereal ulcers in the throat, or blotches on the skin, which, of all the venereal symptoms, are the most certain, and the most easy of cure; yet it was conceived that it removed such symptoms as are the most difficult of cure; but all those cases in which the mezereon has been given with success plainly appear not to have been venereal.

When the hemlock came into fashion in this country, it was given in almost every disease, and of course was tried in some of those com-

¹ In a case of an ulcerated rib from a venereal cause, and five nodes on the shin-bone, of twelve months' standing, a deepsalivation of six months was undergone, after fruitless attempts by gentle friction. None of the sores were healed by the mercury, and the patient was ordered to bathe in the sea, and take the bark. In three or four months the sores all healed up very kindly, but the side the last of all.

² See London Medical Essays, a case published by M. Fordyce, now Sir William Fordyce.

plaints consequent to the venereal disease, and some of these it was found to cure, so that it now stands upon the list of remedies. Velno's vegetable syrup has had similar effects in some of these cases, and opium appears also to have many advocates. Opium, like the sarsaparilla and mezereon, was supposed by its first introducers to cure the lues venerea,¹ but, like the sarsaparilla, it appears to have no effect till mercury has done its best or its worst.² It has certainly considerable effects in many diseases, both in such as are consequent to the venereal disease, and others arising from other causes.

It has been long a favorite medicine of mine, not only as relieving pain, for that is its common effect, but as a medicine capable of altering diseased actions and producing healthy ones. In all sores attended with irritability, a decoction of poppy heads, made into a poultice, is an excellent application. Bleeding sores that do not arise from weakness, but from irritability, have the bleeding stopped immediately by this application. Mr. Pott is, I believe, the first who showed the world its use in mortifications. My first mode of applying it for the cure of diseases was locally, in which I found it had most salutary effects in some cases, and it was ordered afterwards internally upon the same principle; and it was also found to have salutary effects in this mode. In two cases that had been long suspected to be venereal, its effects were very remarkable, and, by its having cured them, it confirmed me in my opinion that they were not. But when I was informed that they cured the venereal disease in the army in America by opium, I then began to question myself whether I had formed a right judgment of the nature of those two cases which were cured by opium. To ascertain whether opium would cure the lues venerea or not, I made the following trial at St. George's Hospital.

A woman was taken into the hospital with blotches on her skin, which had arrived to the state of scabs, and with well-marked venereal ulcers on both tonsils. A grain of opium was ordered to be taken the first night, two the second, and so on, increasing a grain every night, unless something should arise to forbid it. This was closely followed till the nineteenth night, when she was ordered a dose of physic, as she had become costive, and the opium was omitted. On the 20th, she began again, and continued increasing the dose as before, till it amounted to thirty grains, no alteration being produced in the sores, except what arose from the loss of time, whereby they were rather worse. I concluded that if she had taken mercury to affect the constitution as much as the opium did, the venereal disease must have been nearly cured, or at least much lessened; but as that was not the case, it convinced me that the opium had no effect whatever on the venereal disease. I then put her under a course of mercury by friction, and in a short time it affected her mouth; the sores soon began to look better, and they went on healing without interruption, till the disease was cured. I may just observe, the inconvenience from the opium was not considerable, for, although it kept her quiet, she was not constantly dozing.

¹ See Medical Communications, vol. i. page 307.

² See a pamphlet published by Mr. Grant.

Luke Ward was admitted into St. Bartholomew's Hospital January 12, 1785; his complaint was an ulcer in the throat of three months' standing, which, both from its appearance and the symptoms which preceded it, seemed to be venereal. He was ordered two grains of opium twice a day, which he took a few days without any other effect than that of sleeping better at night than usual, when the dose was increased to two grains three times a day. His throat now gave him less pain, but upon inspection was not found to be at all mended. After two days the dose was increased to three grains thrice a day; from this quantity he felt little or no inconvenience; he complained of being a little drowsy; his eyes were rather inflamed, and his face rather flushed. He continued to take this quantity for five days, and then it was increased to three grains four times a day. Next morning the redness and heat of his face were much increased, and had extended over his whole skin; he complained of pain in his head. His pulse was full and strong; he was bound in his body, and his belly was tense and painful. The opium was omitted, and such remedies as the present symptoms seemed to require were given, but without effect, all his symptoms continuing to increase till he died, which was on the fourth day after; during this time the ulcer increased much, and the discharge of saliva was so great as to resemble a slight salivation.

This case proves in the first place, that the opium had no effect upon the ulcer in the throat; and, in the next, that it is a medicine capable of producing very violent effects on the skin, requiring therefore great caution in the mode of administering it.

John Morgan was admitted into St. Bartholomew's Hospital with an ulcerated leg. The common applications were tried for seven weeks, at the end of which time he was in every respect worse, having no sleep from constant pain, and he was sinking very fast. Two grains of opium were given every two hours for twenty-three days; it made him hot and costive, and his pulse became strong and full, but without sleep or abatement of pain. The dose was increased to four grains every two hours in the day, and eight grains every two hours during the night. The effects were costiveness, retention of urine, loss of appetite, an inflammatory disposition, no sleep, without any amendment of the ulcer. On the third day of taking the last-mentioned quantities he awoke from a short sleep delirious, and continued so for twelve hours, when it left him very weak, sick at his stomach, and with a low pulse. In three or four hours the delirium returned, and continued forty-eight hours; the pulse, on its return, immediately rose, and his strength returned to a very great degree. When it went off he fell into a sound sleep for about eight hours, and awoke very tranquil, though weak; no more opium was given, and the leg in the space of a month healed.

In the first twenty-three days he took twenty-four grains a day; for the last three days he took seventy-two grains a day. In twenty-six days he took seven hundred and sixty-eight, which is nearly two ounces of opium.

Sarsaparilla, from the comparative experiment made with it and the gualacum, would appear to have no effect upon the venereal irri-

tation itself, and therefore can be of no service till that irritation is destroyed; and as mercury is the antidote to that poison, and becomes one of the causes of the complaints in which sarsaparilla is useful, therefore mercury is not only necessary to destroy the poison, but also assists in forming the diseases we are now treating of.

It is easy to conceive it in many cases to be of use in preventing the formation of the disease arising from mercury. When given along with the mercury it is often joined with the gum guaiacum, or the wood of the guaiacum, which we know will have some effect.

The sarsaparilla is generally given in form of a decoction, three ounces to three pints of water, boiled down slowly to a quart, and the half or whole is drunk every day, generally at three different times, often at meals. It is sometimes ground to a powder and taken every day with the same effect; but I should prefer the extract made into pills, as the easiest way of taking this medicine.

In many of these cases I have seen good effects from the hemlock, of which the following is an instance; and I would farther refer the reader back to my observations on this medicine, which I gave when treating of the disease produced in consequence of a bubo, p. 387.

A poor woman had undergone repeated salivations, which had always relieved the most pressing symptoms; but after that she was afflicted more or less for three or four years, ulcers broke out in her nose, and all over her face, with what is called a true cancerous appearance. The sores became soon very deep, and gave very considerable pain. Mercury, sarsaparilla, and bark were given without effect; the sores getting daily worse, the parts affected were ordered to be held over the steam of a decoction of hemlock every four hours, and as much extract to be taken internally as the patient could bear. She had sleep, and was free from pain the first night; and in a few days the sores put on a healing appearance. She lost her nose and one side of her mouth; but in six weeks' time every part was skinned over. She remained well for three months, when the disease returned with redoubled violence, and soon destroyed her.

§ 2. *Of the Continuance of the Spitting.*

It sometimes happens that the spitting continues after there is every reason for supposing the mercury to be entirely out of the constitution. As it is only a continuation of an action, or an effect of mercury having been in the constitution, it is necessary to distinguish it from the original, or from the immediate effect of mercury; since on this distinction rests the method of cure. Such constitutions have been generally supposed scorbutic; and where there is a great susceptibility of the mercurial stimulus in these parts, the salivation will continue for months after the mercury has been completely removed; but this medicine not being given now in quantity sufficient to produce such violent effects on the salivary glands, these cases seldom occur.

In such cases I would recommend strengthening diet and strengthening medicines. Sea bathing is one of the best restoratives of relaxed

habits, especially after mercury. Mead's tincture of cantharides is supposed to be of service in those cases.

The alveolar processes have sometimes become dead, and exfoliations have taken place; and this alone has kept up a discharge of saliva. When this happens we must wait till separation takes place, and extract the loose pieces, after which the salivation will subside.

I have seen part of the jaw exfoliate from this cause. In most cases the teeth become loose, and in many they drop out.

CHAPTER V.

OF PREVENTING THE VENEREAL DISEASE.

As diseases in general should not only be cured, but when it is possible prevented, it will not be improper to show, as far as we know, how that may be done; for, in this disease, we can with more certainty prevent infection, its origin being known.

Preventives are previous or immediate applications, and may be divided into various kinds; as those that will not allow the venereal matter to come in contact with the parts, those which wash it off before it stimulates, and those which will act chemically and destroy the poison.

Oils, rubbed on a dry part, stick to it and prevent anything that is watery from coming in contact with it; and, as the venereal poison is mixed with a watery fluid, it is not allowed to touch the part.

Everything which has a power of mixing with the venereal matter, and removing it from the part to which it is applied, may prove a prevention. Caustic alkali is the best for this purpose; it unites with the matter, forming a soap, and is then easily washed off.

It is possible this union with the alkali may destroy the poison; the alkali must be much diluted, or it will excoriate.

Lime-water would make a good wash.

If both these methods were put in practice there would be still more security.

Corrosive sublimate in water, about a grain or two to eight ounces, has been known to prevent the catching of the disease.

[RICORD.—As Hunter says, we should not only pay attention to the cure of diseases, but, in every possible way, aim at their prevention. Under the latter point of view, there is, perhaps, no affection the prophylaxis of which has been the subject of more conscientious researches, and, I must add, the occasion of more speculations, than syphilis. Whilst impudent charlatanry has proclaimed futile or dangerous resorts, false modesty, timid morality, and religious prejudices have often retarded the progress of art. Yet, as Jenner made himself forever renowned by discovering vaccination as a prophylactic means against smallpox, so he who shall find as absolute a protection against syphilis will acquire a claim to immortality. But, while waiting for the dis-

covery of a sure preservative, the existence of which is rendered more than probable by our certainty of the specific nature of syphilis, let us examine, with all the gravity that so delicate a subject requires, the means which art possesses for protection against venereal diseases.

Generally, when the prevention of these diseases has been considered, no division of the subject has been made, and no regard paid to the different circumstances in which individuals may be placed. To arrive at any more positive or at least more rational conclusions, it is absolutely necessary to divide persons into three classes: 1. Those already diseased, and capable of infecting others; 2. Sound persons who expose themselves to the disease; 3. Infants at the time of conception, during gestation and parturition.

1. *Infected Persons.*—If our passions did not often get the mastery of our consciousness of right—if men were convinced that there is, perhaps, no more culpable act than to communicate a disease, the consequences of which are so serious, and which is not only a scourge to the individual compromised, but descends from one generation to another—a conscientious reserve and voluntary retirement on the part of infected persons, up to the time of their entire purification, would extinguish syphilis forever. But either from unconcern, unpardonable thoughtlessness, or ignorance, diseased persons abstain from acts capable of communicating the disease only when the pain surpasses the pleasure. Again, and in accordance with the preceding considerations, women are more dangerous than men; and it is much more common to find that a woman has infected a large number of men, than that a man has infected several women.

In any country where the public *hygiène* is subjected to absolute laws, it is more important to establish lazarettos for syphilis, that common and universally threatening disease, than for the plague and yellow fever, the contagion of which is much more questionable. I am well aware that the religious restraints of the Jews are not of our age; that *Saint-Germain-des-Prés*, that bastille for the infected, cannot be rebuilt; that shaving the hair, as certain tribes of Abyssinia do, would disfigure too many heads, and that, if the fear of the consequences and the pain of the disease have no effect, the old scourge of the *petites-maisons de Bicêtre* would be just as ineffectual. We are, therefore, reduced, at the present day, to warning patients of their condition, and confining all coercive action to public women who follow the tolerated trade of prostitution.¹

It is generally easy to ascertain if a man be diseased, since those parts which are the ordinary seat of primary symptoms can be easily and thoroughly inspected; but in a woman, the case is often different; and as Michel Cullerier wittily remarked, though we can frequently discover when a woman is diseased, who can ever assert that she is not; especially if we confine ourselves, as at his time, to an external examination?

When a man comes to a surgeon to inquire if he can communicate any disease, if it be important to examine with the greatest care all

¹ Consult Parent-Duchâtelet, *De la Prostitution dans la ville de Paris*; Paris, 1837, t. ii. p. 454, *et seq.*

the parts of his person capable of being infected, and to abstain from a decided opinion in doubtful cases, where, for example, the glans, in consequence of phimosis, cannot be entirely uncovered, it is absolutely impossible to come to any reasonable conclusion on the state of a woman without a careful speculum examination, since the deep parts of the vagina and uterus may be the seat of disease, presenting no external symptoms.

In respect to the earliest time in which syphilis is contagious, my experiments on inoculation having taught me that symptoms capable of being communicated to others may be developed within two or three days after exposure, those persons who are liable to become *foci* of infection should be examined within this time. It will be seen from this consideration, how little security is afforded by the visits which are made to public women, once a week when they are collected together in houses of ill-fame, and once a month when they live alone.

It is often difficult to express a decided opinion on the symptoms of a person who comes to inquire with regard to their contagiousness, and whether he may be allowed sexual intercourse, which is *sometimes obligatory*. We know very well that a chancre in its progressive stage is the only syphilitic symptom which can be inoculated; but is it always easy without previous trial to distinguish a primary syphilitic ulcer from other ulcerations foreign to syphilis, or which belong to its secondary form? Certainly not; and when the slightest doubt remains in the mind, all sexual connection should be forbidden. But though it be necessary to keep within the bounds of prudence, there is no need of falling into the exaggerations of some ancient and modern speculators and some over-timorous authors. Thus, in gonorrhœa, as I have said in other parts of these additions, so long as the discharge is purulent, sexual intercourse should be forbidden; but when it is only mucous, and with still stronger reason when there are only shreds or flakes in the urine, or those sticky, lactescent or curdy drops at the meatus in the morning, which go by the name of the morning gleet, or *goutte militaire*, then, to prevent sexual connection would be to condemn a large part of the population to absolute celibacy! We cannot, indeed, the next day after a discharge has stopped, assert that there is no more danger of contagion, and the same is true when a mucous discharge again becomes purulent; but, with these exceptions, an oozing of mucus is not contagious. I might add thousands of observations to those given on the authority of Bell; and, among others, that of a distinguished specialist, who has been married for several years, and whom I have often heard say that he himself was of this number.

Again, if marriage or sexual intercourse be allowed to men only when their canal is absolutely dry, I do not see why the same caution should not be required of women; and, in that case, how many could be found of whom this is strictly true? Certainly not the majority of women. In cases cited as contrary to the opinion which I here advance, persons have either been more credulous than my daily experience allows me to be, or they have been deceived as regards the presumed nature of the discharge, the limit between gonorrhœa and catarrhal inflammation not being always an easy thing to determine

for positive people. I can affirm without fear of being contradicted that women give a hundred claps where they receive one.

With respect to prophylaxis, we should regard as of the first importance all those modes of treatment which, by extinguishing the *foci* of the disease, prevent its propagation. Those remedies therefore should be preferred which make contagious symptoms disappear the soonest, in spite of antiquated doctrines, which, happily, are crumbling to pieces on all sides, and which cannot be sustained by the plastering up that some retrograde authors give them.

When a person is afraid that he is diseased, and *à fortiori* when he already has some suspicious symptom, and he will not, or in some cases cannot abstain from sexual intercourse, the greatest care should be taken with regard to cleanliness. Lotions should be carefully applied to all accessible parts, and injections made into those which are deep-seated. It is evident that this is absolutely indispensable in public women, since they may harbor contagious matter in their genital organs for some time, without becoming diseased themselves. In general, if women were more cleanly, venereal diseases, as a whole, would be less common.

With regard to persons capable of communicating the disease to others, lotions of the chlorides, soap, the alkalies, diluted acids, acetate of lead, alum, wine, and, in fine, of anything which can chemically change the contagious pus, may prevent infection. I have known several medical students who frequently had connection with women affected with chancres immediately after cauterizing them with nitrate of silver, and who never caught any disease.

2. *Persons who expose themselves to Infection.*—In this class of persons, the prophylactic means to be employed before, during, and after the sexual act, are different.

Before the act, a scrupulous examination of the parts should be made to ascertain that there is no solution of continuity of the tissues. At this time, cleanliness, and especially alkaline, or soapy lotions, are injurious, for they increase the danger by removing the natural secretions which protect the parts. But the same is not true of lotions applied a long time beforehand, which act as astringents, and give an increased tone or strength to the tissues, without, however, imparting too much rigidity. In this way, habitual lotions at the toilet, with solutions of acetate of lead, alum, wine, and tannin, protect some persons who before were easily infected. Just before coitus, fatty substances will often guard against infection; and surgeons, who are obliged to apply their fingers to affected parts for any length of time, should never neglect this precaution.

Of all prophylactic means, the one which seems to promise the most material protection is the condom; a means which doubtless shocks the sensibilities, but which necessity sometimes tolerates. Yet we must beware of according to condoms a blind confidence. A coat of mail against pleasure, as an illustrious woman said, they are a spider's web against danger; frequently, in fact, they become torn; at other times their substance is permeable; or, they may have been used before and not thoroughly washed; and, finally, when of good and sound materials, they really protect only a part of the genital organs.

During the act, there are certain precautions which are not of indifferent importance. Thus, intercourse should not be wilfully prolonged, as Nicholas Massa remarks in his sixth chapter, *De animi passione et coitu*: "*Si vero quis cum infecta muliere coire voluerit, quod futurum est, non moretur in coitu*;" and the act should be completed by the ejaculation of the semen. It is undoubtedly true that infection of the urethra occurs during the time which precedes the emission of the sperm; and that, in the fortunate cases where no infection takes place, the sudden and rapid passage of the semen, carrying with it the contagious matter which may have been introduced within the urethra, is one of the greatest means of preventing it. It is for this reason that the emission of urine after coitus offers so many advantages.

But it is especially after the act, which it is not always possible to anticipate, that the most careful cleanliness is requisite; every fold of the exposed tissues should be explored, and repeated applications be made of alkaline or soapy lotions; or, better still, of the diluted chlorides, so as to decompose any morbid matter on the parts, without, however, exciting artificial irritation. Finally, every solution of continuity, without exception, *should be immediately cauterized*. This precept is so important that I would have it posted up in every place where persons are exposed.

3. *Prophylaxis of Infants at the time of Conception, during Gestation and Parturition.*—It follows, from what I have elsewhere said, that the presence of every primary symptom without distinction does not give rise to constitutional syphilitic infection, nor, consequently, to the danger of transmitting syphilis by hereditary descent. Gonorrhœa, for example, as we understand it; that is, discharges which do not depend on concealed chancres, have no influence on generation. With regard to primary ulcers or chancres, the parents may be infected with them at the time of conception without the infant having syphilis; unless, during gestation, they cause secondary symptoms in the mother.

In respect to prophylaxis as applied to infants, all chance of conception should be entirely removed, whenever constitutional symptoms exist, or the nature of the primary symptoms renders them probable. Our caution should be carried still farther, and, in the absence of all appreciable symptoms, we should assure ourselves by the antecedents, so far as possible, that the parents are not under the influence of a syphilitic diathesis; in which case they may give birth to infected infants until appropriate treatment shields the latter from infection. With still stronger reason, when the mother during pregnancy is affected with primary syphilitic symptoms, of such a character as to give rise to secondary symptoms, or if the latter already exist, we should hasten to cope with them; and, far from regarding pregnancy as a contra-indication to treatment, should recollect that it generally prevents the disease in the infant, and, when skilfully administered, obviates the frequent abortions which syphilis excites.

When primary symptoms have been contracted by the mother a short time before delivery, since the infant may be infected in its passage into the world, the same course should be followed with it as with a person who has just exposed himself to an impure connection.—RICORD.]

PART VII.

CHAPTER I.

OF DISEASES RESEMBLING THE LUES VENEREA, WHICH
HAVE BEEN MISTAKEN FOR IT.

THERE is probably no one disease to which some other may not bear a strong resemblance in some of its appearances or symptoms, whereby they may be mistaken for each other. The situation of a complaint also may mislead the judgment. A lump, for instance, in the breast of a woman may resemble a cancer so much as to be mistaken for one, if all the distinguishing marks of cancer are not well attended to. An ulcer on the glans penis, or in the throat and nose, creates a suspicion of the venereal disease. Even the way in which a disease is caught becomes a cause of suspicion. The fluor albus in women sometimes produces a simple gonorrhœa in men. Drinking out of the same cup with a venereal patient was formerly supposed to be capable of communicating the lues venerea, but this notion is, I believe, now exploded. Of late years, a new mode of producing the venereal disease is supposed to have arisen; this is by the transplanting of a tooth from the mouth of one person into the mouth of another. That such practice has produced diseases is undoubted; but how far it has been venereal remains to be considered.

Diseases which resemble others seldom do it in more than one or two of the symptoms; therefore, whenever the nature of the disease is suspected, the whole of the symptoms should be well investigated, to see whether it agrees in all of them with the disease it is suspected to be, or only in part. This observation seems to be more applicable to the venereal disease than any other, for there is hardly any disorder that has more diseases resembling it in all its different forms than the venereal disease; and when a disease resembles the venereal in some of its symptoms, but not at all in others, then those other symptoms are to be set down as the specific or leading ones of the disease to which it belongs, the resembling symptoms to the venereal being only the common ones. But if a disease is suspected to be venereal, though it is not perfectly marked, yet if it resembles the venereal in most of its symptoms, it must be supposed to be venereal, that being the most probable, although it is by no means certain; for probably the venereal can

hardly be demonstrated in any case, especially in the form of the lues venerea, from its not having the power of contamination.

[G. G. B.—There has been much confusion respecting syphilitic and pseudo-syphilitic diseases, which would have been in a great measure avoided had due attention been paid to the obvious principles which should determine the identity or diversity of diseases. This confusion is in a very slight degree chargeable on Mr. Hunter. Yet there are a few instances where he seems to have been misled by preconceived opinions respecting the venereal diseases, which a longer observation would have shown him were more than doubtful.

Diseases may be confounded with syphilis which have no connection with any virus whatever. This is frequent in sores on the genitals, where superficial excoriations, which by proper treatment may be healed in three days, and herpetic vesicles, which exactly resemble in their appearance and course those which so frequently occur on the lips, have been often erroneously treated as venereal. The same observation applies with equal force to some forms of sore throat and cutaneous eruptions.

The existence of a morbid poison as the cause of lues venerea is inferred from two facts. In the first place, the primary symptoms have been ascertained by long observation to be the consequence of communication with infected persons, and to be capable in the same way of infecting others. In the second place, these primary symptoms have been observed to be followed after an interval of time by secondary symptoms. It is true, that in practice the nature of the case precludes us from obtaining full proof of these points in every individual instance, and we are forced to determine the treatment on probable conjecture rather than on certainty. But they have been ascertained to be generally true of the class of symptoms which is called venereal. It is on their truth that the received opinions of the pathology of the disorder rest, and in a medical argument, unless one or both of them is satisfactorily ascertained, it cannot be denied that we have no adequate proof of the existence of any virus at all.

The mode in which the disease has been derived, if it exists alone, may mislead, since there may be irritating qualities in the secretions of diseased parts, which may affect the parts to which they are applied, without the existence of any distinct morbid poison capable of generating a specific malady. Unless, therefore, the exact identity of the symptoms in the party which communicates and the party which receives the infection is fully shown, or unless the infection can be traced through several successive individuals, some uncertainty affects the conclusion. But where the regular sequence of secondary on primary symptoms is undoubtedly established, it is difficult to avoid the inference that there exists a distinct virus, which is received into the circulating fluids, and carries the seeds of the disease to the remoter parts of the body. It is observable that the passages which have been so frequently quoted from Celsus and others, as proofs of the existence of the venereal disease in Europe before the close of the fifteenth century, refer only to the local injury sustained by those who come in con-

tact with the diseased, and are entirely silent as to any constitutional affection being the consequence of the local malady.¹

But where the existence of a poison is proved, it may still be questioned whether this poison is the same with that of lues venerea; and this question can only be answered by a comparison of the mode of communication, the character of the symptoms, the course and progress of the disease, and the mode of cure. Where these are the same as are found in syphilis, we can scarcely doubt the identity of the virus; where there is a decided and uniform difference under similar circumstances, we must naturally infer a diversity.

Hence, any error or inaccuracy in our notions of the venereal disease itself will infallibly affect our discrimination of the diseases which resemble it, and lead, according to the prepossessions and bias of the individual, either to the undue extension or the undue limitation of the term. Of late years, the most frequent error seems to have been the exclusion of cases which are manifestly syphilitic, on account of some difference from the preconceived opinions which have been formed of lues venerea. Writers on this subject seem scarcely to have been aware how various are the appearances of venereal symptoms, and how different at different times is the effect of remedies. A primary sore, in which the characters of a chancre as given by Mr. Hunter are not obviously visible, may nevertheless be venereal. It may be derived from a venereal sore, and may produce constitutional symptoms which have every character of genuine syphilis. In secondary affections, the variety is still greater. Symptoms of a doubtful character are frequently so intermixed with others, which it is impossible to mistake, as to be certainly attributable to the same cause.

Hence, when we meet with deviations from those forms of the disease which are most peculiar and most characteristic, we are not warranted in inferring a diversity of cause, or ascribing the symptoms to the existence of a different virus from that of genuine syphilis. Yet many histories have been given to the world as pseudo-syphilitic in which the appearances exactly accord with some forms of the lues venerea.

Again, the notions which have prevailed as to the mode of cure have been a still more fertile source of error. Mercury has been considered as the only cure of syphilis, and its action has been taken as the test of the nature of the malady. Where on the one hand mercury has disagreed, or where, on the other, the patient has recovered without

¹ The relation between primary and secondary symptoms was formerly unknown. With reference to this point, the history of syphilis may be divided into three periods: The first, during which primary symptoms were the only ones known, is anterior to the epidemic of the fifteenth century; in the second, commencing with this epidemic and extending to the appearance of Fernel's work,* secondary or constitutional symptoms were more particularly noticed; and, finally, in the third period, primary symptoms were clearly distinguished from constitutional symptoms, which, in turn, and especially since Hunter's time, have been divided into secondary and tertiary.—RICORD.

* J. Fernel.—*De Lues venereæ curatione*, &c.; Venice, 1546; Padua, 1580; Frankfort, 1581. Translated into French by Michel Delong; Paris, 1633.—ED.

resorting to its use, it has been inferred that the disease has not been venereal.

Yet it has been fully established by the experience of former ages, confirmed as it has been by a long series of experiments which have been recently instituted, that most, if not all venereal symptoms, whether primary or secondary, may be subdued without the use of mercury. It is not necessary to refer to these experiments in detail. They are well known; and the conclusion which has been drawn from them is irresistible, or at least there are no sources of error which can materially impeach its general truth. On the other hand, the unfavorable action of mercury is no proof that the disease is not venereal. Many circumstances may interfere with its effect as an anti-syphilitic, and render it inert or injurious in cases which are truly venereal. When it produces no sensible effect on the system, it frequently has no action also on the venereal symptoms. When it produces vomiting, or dysentery, or crethismus or materially deranges in any way the health, venereal symptoms will usually spread under its use. Cases are daily occurring in which the subsequent progress of the malady proves the truth of this view; in which the ultimate cure is effected by means of mercury, though at one time it has seriously aggravated the affections it was employed to cure. In such cases, a practical knowledge of the course and aspect of lues venerea can alone guide the judgment. If the practitioner has not this knowledge, he will be staggered in his belief as to the nature of the disease on the occurrence of any untoward symptoms, and will usually abandon the mercurial treatment altogether. If he has such an acquaintance with the malady as to give him confidence in the accuracy of his opinion, he will inquire whether there has been no obstacle to the beneficial effects of the remedy, which will account for its failure. He will suspend it for a time, with the intention of resorting to it again at a subsequent period, when he can employ it with greater precaution and under more favorable circumstances.

If then, the points of distinction on which reliance has been usually placed are deceptive, it may be asked what other grounds of discrimination can be substituted? The answer is plain. Where there is a difference of virus, the difference of effects is not accidental or occasional, but constant and uniform. No doubt can arise as to the diversity of measles and smallpox, though these diseases were formerly confounded, because the distinction, when once pointed out, is confirmed by daily experience. The yaws of Africa and the West Indies, the sibbens of Scotland and Canada, the scherlievo of the Illyrian coast, the effects of the poison of glanders on the human subject, cannot be confounded with syphilis, because the symptoms are different; and this difference, which may be traced uniformly through a series of individuals affected by these maladies, prevents the possibility of attributing them to the same cause. The peculiarities which have been supposed to take the cases described as pseudo-syphilitic out of the class of syphilitic diseases are uncertain and variable, and can never constitute the distinctive characters of a separate and independent malady.—G. G. B.]

Although the venereal disease keeps its specific properties distinct

in its several forms, yet its symptoms are in appearance common to many other diseases, and in that light it cannot be said to have any one symptom peculiar to itself. For instance, every symptom of the venereal disease, in form of a gonorrhœa, may be produced by any other visible irritating cause, and often without any cause that can be assigned; even buboes and swelled testicles, which are symptoms of this disease, have followed both stimulating injections and bougies, when applied to the urethra of a sound person; and, indeed, these two symptoms, when they do arise from a venereal cause, in many cases are only symptomatic, not specific, but more especially the swelled testicle.

Sores on the glans penis, prepuce, &c., in form of chancres, may, and do arise without any venereal infection, although we may observe that they are in general a consequence of former venereal sores which have been perfectly cured.

The symptoms produced from the infection, when in the constitution, are such as are common to many other diseases, viz., blotches on the skin are common to what is called scorbutic habits; pains common to rheumatism, swellings of the bones, periosteum, fasciæ, &c., to many bad habits, perhaps of the scrofulous and rheumatic kind. Thus, most of the symptoms of the venereal disease, in all its forms, are to be found in many other diseases; therefore, we are led back to the original cause, to a number of leading circumstances, as dates, and its effect upon others from connection when only local, joined with the present appearances and symptoms, before we can determine absolutely what the disease truly is; for all these taken together may be such as can attend no other disease. However, with all our knowledge, and with all the application of that knowledge to suspicious symptoms of this disease, we are often mistaken, often calling it venereal when it is not; and sometimes supposing it to be some other disease when it is venereal.

Rheumatism, in many of its symptoms, in some constitutions, resembles the lues venerea; the nocturnal pains, swelling of the tendons, ligaments, and periosteum, and pain in those swellings, are symptoms both of rheumatism and the venereal disease when it attacks those parts; I do not know that I ever saw the lues venerea attack the joints, though many rheumatic complaints of those parts are cured by mercury, and therefore supposed to be venereal.¹

Mercury, given without caution, often produces the same symptoms as rheumatism; and I have seen even such supposed to be venereal, and the medicine continued.

¹ The statement seems to be too general. Cases occasionally, though rarely, occur where inflammation of the synovial membrane of the joints shall take place in union with secondary symptoms of lues venerea of an undoubted character; shall increase in severity during the increase of the other symptoms; and shall subside as soon as mercury is sufficiently used, and the eruption or sore throat are controlled by its exhibition. In such cases the synovial inflammation has an acute character; and is attended with a degree of pain and tension and superficial redness, which sufficiently distinguishes it from that languid form of the same affection which is common under circumstances of general cachexia, whether that cachexia has been produced by mercury acting as a poison, or by the long duration of the venereal disease itself, which has been allowed to continue till every function necessary for the maintenance of nutrition and of health has become deranged, and the patient has been reduced to a state which closely resembles scrofula.—G. G. B.

Other diseases shall not only resemble the venereal in appearance, but in the mode of contamination, proving themselves to be poisons by affecting the part of contact, and from thence producing immediate consequences similar to buboes; also, remote consequences similar to the lues venerea.

As errors in forming a judgment of a disease lead to errors in the cure, it becomes almost of as much consequence to avoid a mistake in the one as in the other; for it is nearly as dangerous in many constitutions to give mercury where the disease is not venereal, as to omit it in those which are; for we may observe that many of the constitutions which put on some of the venereal symptoms, when the disease is not present, are those with which mercury seldom agrees, and commonly does harm. I have seen mercury, given in a supposed venereal ulcer of the tonsils, produce a mortification of those glands, and the patient has been nearly destroyed.

When treating of the lues venerea, and giving the symptoms and general appearances of the disease, I related some cases which appeared to be venereal, though they really were not, and I shall now refer the reader to these, as it will be unnecessary to give them again here, although, if they had not formerly been taken notice of, this would have been a very proper place.

As the diseases in question are various, and not to be reduced to any system or order that I am acquainted with, I shall content myself with relating the cases, and thereby put in the power of others to judge for themselves, if they should not be inclined to adopt the conclusions I have drawn from them.

On the 28th of July, 1776, a gentleman, then in the West Indies, scratched the end of his finger with a thorn. On the 31st, he opened an abscess on the shoulder of a negro woman who had the yaws, and had been long subject to such abscesses in different parts of the body, and to incurable ulcerations afterwards. At the instant after the operation he perceived a little of the matter upon the scratch, and exclaimed that he was inoculated. On the 2d of August, he amputated a boy's finger, of thirteen years of age, for a sore resembling worm-eaten wood. The scratch on his finger did not heal, but from time to time threw off whitish scales; this appearance alarmed him, and he rubbed in mercurial ointment very freely. Notwithstanding this, in the month of September, a painful inflamed tumor appeared on the second joint of the finger, which was soon followed by several others on the back of the hand, in the course of the metacarpal bone of the forefinger. He still continued the mercurial friction, but without effect, for the tumors daily multiplied, and by the month of November extended to within a small distance of the axilla. They did not go on to suppuration at this time. About the end of November, he began to be affected with severe nocturnal pains in different parts of the body, but especially along the tibia and fibula, with frequent severe headaches, which continued to increase to an almost intolerable degree for five months, though he used mercurial friction, with decoction of sarsaparilla, every day in great quantity.

In the month of May, 1777, a scabby eruption appeared in different

parts of the body, especially the legs and thighs, and the before-mentioned tumors ulcerated; but this was followed by a remission of the nocturnal pains.

He could never bring on a salivation, though his mouth was constantly tender, even for months. The ulcerations became daily worse, and a voyage to England was thought the only resource. He arrived in London the first of August, and by the advice of Dr. William Hunter and Sir John Pringle, he began again a course of mercury and sarsaparilla, with a milk diet. I was called in, and judging that two-thirds of a grain of mercurius calcinatus, every day, was too small a dose if it were judged to be venereal, it was ordered to be gradually increased to five grains; and he continued this course till November, when all the sores were perfectly healed.

He now discontinued the mercury, and remained free from all symptoms of the disorder, except some nodes on the tibia, and rheumatic pains on exposure to cold, until about twelve months ago,¹ when he began to have an uneasiness in swallowing, a rawness in the throat, and a discharge of viscid mucus from that and the posterior nostrils, all of which still continue.

The following observations may be made on the above case:—

There can be little doubt that the disease was the yaws. The yaws are a disease that resembles the venereal in several of its symptoms, as well as in the manner in which it is most commonly communicated. It differs, however, in some essential particulars. The yaws have a regular progress, after going through which they leave the constitution in a healthy state, at least free from that disease, it being sufficient for the cure that the patient be put in a state favorable to general health. Thus, a negro laboring under the disease must do little or no work, be kept clean, and have a better diet than usual. Under these circumstances, he commonly gets well in from four to nine months, although the unfavorable cases will continue much longer. Various medicines are given for the cure, but it is not clear that any of them do good. Mercury has considerable power over the disease, without being a specific for it. If given early, it will either check the progress of the disease or perhaps even heal up all the sores on the skin; but nothing is gained by this, for the disease soon breaks out anew. Some practitioners of medicine in the West Indies are of opinion that interrupting the course of the disease by mercury is productive of no other evils than those of loss of time and an imperfect cure; others affirm that it is often the cause of what they call the boneache. Towards the end of the disease, it is generally allowed that mercury may be given safely, and even with advantage. It is probable the long continuance of the disease, being above fourteen months, and also the pains in the bones in the present case, were owing to the very early and free use of mercury. It may be allowable to add that the yaws do not differ more from the venereal disease in curing themselves

¹ The first edition of the work was published in 1786; consequently it would appear that a considerable interval elapsed between the healing of the ulcerations and the occurrence of the sore throat.—G. G. B.

than in this circumstance, that, like the smallpox, they affect none a second time.¹

A gentleman applied to me for the cure of chancres, seated on the attachment of the prepuce to the penis, and also on the frænum. Mercury was used chiefly by friction, in order to affect the constitution; it was also applied to the sores, in order to affect them locally. The cure of the chancres went on gradually and without interruption, and in about five weeks they were perfectly healed. He almost immediately had connection with a woman, and long before we could suppose the mercury had all got out of his constitution. In a very few days after the first connection, the prepuce began to be chopped all round on the edge of its reflection. He continued his connection, and upon its growing worse he applied to me, and I found the chops very deep, and the prepuce there so tight and sore that he could not bring it back upon the penis. The question now was, whether this was venereal or not. The sores themselves did not appear to be so; but more was to be taken into the account than simply appearances. It was first to be considered whether it might possibly be a return of his former complaint. This could not be the case, because the sores were not in the same parts. It was next to be questioned, was it possible for this part of the prepuce to have been contaminated at the same time with the former, and the poison not to have come into action till now, having been prevented by the course of mercury, which had not cured the disposition? This could not be well answered, although not probable, because the poison appeared to come too soon into action after leaving off the medicine; for I did suppose there was still a great deal of mercury in the constitution. Was it, then, possible for him to have caught it from the woman? This, I supposed, could not have been the cause of these chops, whatever effect this connection might have to render them venereal hereafter; for they appeared too soon after it, especially as he had mercury in his constitution at the time, and as the parts had been accustomed to the application of venereal matter but a little time before. Although, from all circumstances taken together, I was convinced the case was not venereal, yet an apprehension arose in his mind concerning the possibility of having given it to the lady, as he had connection after the first appearance of the sores. I was equally convinced of the impossibility of the one as the other, therefore desired him to rest easy on that head. He went immediately into the country, and nothing being done for those chops, they got perfectly well. In less than a fortnight after this connection, the lady became a little indisposed with a slight fever, and a swelling came in one of her groins. I watched the progress of this swelling, which was slow, and I did not believe it to be venereal. It at last formed matter and broke, and a poultice was applied to it. Instead of ulcerating or spreading, it rather had a healing disposition, and in about six weeks, it was perfectly well. While it was healing, scurfy

¹ The earliest and best description of the yaws is given in the fifth volume of the Edinburgh Medical Essays, and has been attributed to a gentleman of the name of Home. The case related by Dr. Adams, in his work on morbid poisons, as occurring at Madeira, seems not to have been a case of yaws at all.—G. G. B.

eruptions came out on the skin, some on the face and thighs, but more especially on the hands and feet, where the cuticle peeled off. Upon the first appearance of these, I was a little staggered; but, as the sore was healing, I was unwilling to give credit to the appearance, and therefore begged that nothing might be done, and they all got well.

From the general outline of these cases, one would naturally have said they were venereal; but the particular circumstances being all investigated, and the whole taken together, led me to suppose that they were not, and the event proved that to be the case.

The following case was communicated by Mr. French, of Harpur Street.

"June the 9th, 1782, a gentleman applied to me for an ulcer which was seated on the glans penis, attended with excessive pain. Knowing him to be an intemperate man, and learning from himself that during a state of intoxication he had been connected with a woman, I judged the complaint to be venereal. He was now in a feverish state, and unfit for the exhibition of mercury; I therefore prescribed for him decoction of bark, with elixir of vitriol and tinctura thebaica, proportioned to his pain. I directed him to abstain from every kind of fermented liquor, to live chiefly upon milk, and to wash the ulcer with a liniment composed of equal parts of oil of almonds and aqua sap-
pharina.

"About the 17th of the same month, some check having been given to the fever, the sore looking cleaner, and his pain having abated, I ordered him small doses of argentum vivum and extract of hemlock.

"July the 4th, finding the mercurial course to disagree, I ordered three grains of the extract of hemlock to be taken two or three times a day, and the decoction of bark to be taken as before, with twenty drops of tinctura thebaica, which was gradually increased to sixty, at bedtime.

"The ulcer had spread very much during the mercurial course, and had now destroyed half the glans penis.

"October 1st, Mr. Hunter was consulted, and ordered the patient to add the powder of sarsaparilla to the decoction of bark, to take laudanum freely, and wash the sores with tinctura thebaica. Soon after beginning this course the remainder of the glans penis sloughed off, the parts gradually healed, and health was restored.

"There were two other symptoms in this case which deserve to be taken notice of; a considerable enlargement of the scalp on the right side of the os frontis, and on the left parietal bone, attended with excessive pain, and vibices resembling the sea-scurvy on the inside of the left tibia, both of which disappeared in the course of the cure.

"Some months after, the tumor in the head returned, and several abscesses were formed, which were opened, and the cranium found carious to a great extent. On account of the pain, he has for some months past taken two hundred and forty drops of laudanum and six grains of opium daily. These sores healed up, and others broke out in different parts of the head, which also got well; and in June, 1785, there was only one large ulcer in the angle of the right eye."

A lady was delivered of a child on the 30th of September, 1776.

The infant being weakly, and the quantity of milk in the mother's breasts abundant, it was judged proper to procure the child of a person in the neighborhood to assist in keeping the breasts in a proper state. It is worthy of remark that the lady kept her own child to the right breast, the stranger to the left. In about six weeks the nipple of the left breast began to inflame, and the glands of the axilla to swell. A few days after, several small ulcers were formed about the nipple, which spreading rapidly, soon communicated and became one ulcer, and at last the whole nipple was destroyed. The tumor in the axilla subsided, and the ulcer in the breast healed in about three months from its first appearance. On inquiry, about this time, the child of the stranger was found to be short-breathed, had the thrush, and died tabid, with many sores on different parts of the body. The patient now complained of shooting pains in different parts of the body, which were succeeded by an eruption on the arms, legs, and thighs, many of which became ulcers.

She was now put under a mercurial course, with a decoction of sarsaparilla. Mercury was tried in a variety of forms; in solution, in pills internally, and externally in the form of ointment. It could not be continued above a few days at a time, as it always brought on fever or purging, with extreme pain in the bowels. In this state she remained till March 16, 1779, when she was delivered of another child in a diseased state. This child was committed to the care of a wet-nurse, and lived about nine weeks; the cuticle peeling off in various parts, and a scabby eruption covering the whole body. The child died.

Soon after the death of the child the nurse complained of headache and sore throat, together with ulceration of the breasts. Various remedies were given to her, but she determined to go into a public hospital, where she was salivated, and after some months she was discharged, but not cured of the disease. The bones of the nose and palate exfoliated, and in a few months she also died tabid.

Of the various remedies, tried by the lady herself, none succeeded so well as sea-bathing. About the month of May she began a course of the Lisbon diet-drink, and continued it with regularity about a month, dressing the sores with laudanum, by which treatment the sores healed up; and in September she was delivered of another child, free from external marks of disease, but very sickly; and it died in the course of the month.

About a twelvemonth after the sores broke out again, and, although mercurial dressings and internal medicines were given, remained for a twelvemonth, when they began again to heal up.

[G. G. B.—The author is evidently of opinion that these and similar cases are not venereal, and he elsewhere denies it to be possible that an infant can be contaminated by its parent before its birth. Whether he is right in this opinion must be judged by the following statement of the facts, which are sufficiently frequent and peculiar to be given with confidence in their truth.

When a mother suffers during the period of pregnancy from a constitutional venereal affection, she seems to be particularly disposed to miscarry. The abortion seems to be caused by the death of the infant,

which is very generally born dead, and has usually ceased to show signs of vitality for some days before its ejection.

If, however, miscarriage does not take place, it is most usual that the infant at birth shows no signs of disease. But at a variable period, generally from three to five weeks after birth, it becomes slightly indisposed. Then eruptions appear about the thighs and the groins, between the nates, or on the pudenda. They wear the aspect of discolored patches, generally affecting a circular form, with a shining surface, and some slight desquamation, but without the least tubercular thickening. As the disease proceeds these patches enlarge, and eventually occupy almost the whole body; and in the folds they sometimes slightly excoriate, and even near the anus, at the umbilicus, or on the female pudenda, form small condylomatous excrescences. Then ulcers in many cases take place in the interior of the mouth, and in the throat; the nostrils are partially obstructed by an increase of their secretion, and the voice becomes weak and hoarse. With all this there is much general indisposition. From the first appearance of the symptoms the child does not thrive, and as they continue it becomes very weak and emaciated. If the case be neglected it often terminates fatally, but under the use of mercury all the symptoms are readily subdued, and perfect health may be restored.

Those who come into close contact with a child thus diseased may be contaminated in consequence. If such a child has sores in the interior of the mouth, and in this state sucks the breast of a healthy woman, it is very common that the nipple should become ulcerated; and the ulcer will not resemble the fissures which are so common on the nipples of women who give suck, and which usually occasion no loss of substance, but will be a corroding ulcer, and will destroy the whole or the greater part of the nipple before it is healed. It also produces in general an enlarged gland in the axilla, which, however, rarely passes into suppuration. At an interval of some weeks, sore throat, eruptions, or nodes arise, which are in no respect distinguishable from the common forms of lues venerea.

If a woman who has been thus infected by a child which she has suckled, suckles also another child, which is healthy, no infection will be communicated, provided the sound child is kept carefully to the opposite breast, and is never allowed to take into its mouth the nipple to which the diseased child is applied. But if this precaution is not taken, and the children are applied indiscriminately to either breast, the sound child will contract sores in the interior of the lips, and these will be followed by scaly eruptions on the skin, exactly resembling those which are seen in an infant which has received the infection from its mother.

It would be easy to substantiate what has been stated by the recital of cases. The results are tolerably uniform; at least, the deviations from the ordinary course are not greater than those which occur when the venereal disease is communicated in the usual way, by sexual connection.

It is difficult in the face of these facts, to deny that such cases are the effects of the venereal virus. It is true that the symptoms in chil-

dren are not precisely the same, either in course or appearance, with the most usual symptoms of the venereal disease in adults. Diseases of the bones or periosteum seem never to occur, nor are the eruptions tubercular. Yet, as the symptoms in the adult from whom the disease is received and the adult to whom it is communicated are exactly identical with those of common syphilis, it must be inferred that the difference is to be ascribed to the age and circumstances of an infant, and not to a diversity of virus.

It is impossible to admit the argument used by the author, that secondary symptoms never contaminate, and, therefore, these cases must be mistaken. The facts are so well established that it is more easy to question the principle which has been laid down than to doubt the facts.—G. G. B.]

[RICORD.—I here share Mr. Babington's opinion entirely; only I think that, up to the present time, the absolute nature of the symptoms which may be communicated from infants to nurses, has not been accurately determined, and that a given symptom, reputed a contagious secondary symptom, may at first have been primary; and also, in some cases, that a nurse who is said to have been infected by a child may have contracted syphilis otherwise.

Be that as it may, though this explanation is far from completely satisfying every mind, in the present state of science, there are very many incontestable cases of syphilis communicated from infants to nurses, and *vice versa*.

With regard to tertiary symptoms, which Mr. Babington believes do not exist in infants, they undergo modifications dependent upon the peculiar conditions in which they are developed, and so readily assume the form of scrofula that their specific type is effaced, and their origin lost.]

The following cases, being all derived from one stock, show as much as possible that new poisons are rising up every day, and those very similar to the venereal in many respects, although not in all; therefore, it is the want of similarity that becomes the criterion to judge by, and not the similarity.

The parents of the child who is the subject of the following history were and are to all appearance healthy people. The child was weakly when born; and the mother having little or no milk, when it was three weeks old she gave it to a nurse whose milk was then seven months old, and was giving suck to her own child. The foster mother allowed her own to suck the right breast, while the other sucked the left.

The nurse observed that the skin of the foster child began to peel off; but no rawness or soreness took place except about the anus, where it looked as if scalded. The same kind of peeling took place on the lips, but they did not appear to be sore, although the people in the country said it was the thrush. The inner surface of the mouth and tongue appeared sound. In a fortnight after her receiving the child it died, and then she allowed her own child to suck both breasts for three weeks; at the end of which, she came to town to nurse a gentleman's child.

She gave suck to this second child; but, after being in town about

ten or eleven days, she did not feel herself perfectly well; which made them suppose that the new mode of life, confinement in town, and probably better living, might not agree with her, and she went into the country and took the gentleman's child with her. About three or four days after she went to the country, for instance, about a fortnight after she took this child, and five weeks after the death of the first child, her left nipple, which the first-nursed child had always sucked, began to be sore, so that she could not let the child suck it. This ulcer on the nipple became extremely painful; in a day or two eruptions came out on her face, and soon after all over her body, but most on her legs and thighs. They continued coming out for about a fortnight, and had at first very much the appearance of the eruptions of the smallpox, and on the third day of their eruption were attended with fever, universal uneasiness, and great pain.

Two or three days after the eruption on the skin appeared, one of the glands of the arm-pit began to swell, and formed matter, and was opened within a fortnight after its first appearance, and healed almost directly. Some of the eruptions increased fast and became very broad sores, nearly of the size of a half-crown, especially on the legs and thighs, and were covered with a broad scab; many remained small, and only appeared like pimples. About a fortnight after the first appearance of the eruption, some began to die away; and in four weeks more after this appearance, a foul ulcer attacked the left tonsil.

The surgeon in the country, from all these circumstances, finding he could not get any ground by the before-mentioned treatment, determined to give her the solution of the corrosive sublimate, of which he gave half a grain in solution night and morning; in about a week there seemed to be a stop put to the swelling of the ulcers, and the discharge to be somewhat lessened, the ulcer in the throat putting on a better appearance.

It was at this period I first saw her, which was about six weeks after the first appearance of the eruption, and a fortnight after the appearance of the ulcer in the tonsil. The eruptions were then very much as before described, but the ulcer in the tonsil was clean and healing. From the history of the case I did conceive it not to be venereal; I therefore desired that all medicines might be left off, which medicines could only have been taken for a fortnight at most, because it was after the appearance of the ulcer on the tonsil the mercury was given, which was only of a fortnight's standing when I saw her. She soon after recovered.

After being well for some time she again applied to the surgeon in the country, an abscess having formed where the complaint first began in the breast, attended with fresh eruptions on the face.

The abscess was opened, and it healed up in a few days, and upon taking some cooling physic the eruptions disappeared. She has continued very well ever since, without any other bad effect than the total loss of her nipple. This case was certainly understood to be venereal.

About five days after the appearance of the eruption on the nurse, the gentleman's child was taken away and given to a healthy woman

of a florid complexion, aged twenty-four years, and who had lain in with her first child eleven months when she became wet-nurse to this child. After a few days she observed eruptions on the child's head, not unlike those already described on the first nurse which it had sucked. Its mouth soon after became excoriated, so that it sucked with difficulty. After a short time those eruptions on the head became dry and peeled off, others appeared on the face, knees, and feet, but wholly unlike the former, as the first matured, while the latter appeared only cutaneous, peeling off and leaving a circumscribed spot of a light dun color, which continued increasing for five weeks. These eruptions continued nearly three months from their commencement, at which period the child was extremely emaciated; but no particular treatment was indicated, so no medicine was exhibited, and in a few weeks after it came to London and got perfectly well.

The second nurse, a few days after giving suck to the child, had blotches appear on her left breast, precisely the same with those on the first nurse, with this difference only, that they were fewer in number, and attended with a greater degree of phlegmonous inflammation. They continued, and increased in size for seven or eight days; then the nipple of the same breast became ulcerated, the ulceration spreading so much as to endanger the loss of it; her thighs now became diseased, and afterwards her legs.

She suckled this child about twelve weeks. The disease seemed no longer to increase, and in twelve or fourteen days after this entirely disappeared, without her taking any medicine, except a few ounces of the decoction of the bark. The only application to the breast was unguentum simplex.

The milk at this time became so small in quantity that they were under the necessity of providing a third wet-nurse for the child, and the second returned to the country. Her own child being weaned, she had no farther occasion for the milk, and in a few days it wholly disappeared; but by way of amusing the child when peevish, she allowed it to take the nipple which had been diseased in its mouth; the consequence was, that in a few days this child also became diseased in like manner with the former. She now applied to an eminent surgeon for assistance, who, not being acquainted with the history, supposed it venereal, and ordered a colorless medicine, supposed, from circumstances, to be the solution of sublimated mercury, sixteen grains to half a pint of water; the dose a tablespoonful. She took this medicine as directed, and also gave it to her husband and child; the child a teaspoonful only at a time. While taking this medicine she got well.

The third wet-nurse, like the former, was in a short time affected, but the blotches in this case were still fewer in number, the disease appearing to lose considerably in its power, as each fresh infection became less malignant than the former. She got well without taking any medicine.

[HOME.—Added: "The following case shows the effect of the state of the mind upon the body, and the bad consequences attending the patient's being indulged in his own opinions respecting the nature of a disease. It is given as drawn up himself for my opinion.

“In May, 1789, when in London, I was unhappy enough to have connection with a woman of the town. Five days after, I took more than usual exercise, and the day being warm I perspired profusely. This affected my head, more particularly my forehead. In this situation I went into the country, and while on the road the sweating increased; when it went off it left a burning heat about the forehead, so that I could not wear my hat. This heat continued all night, attended with an external pain round the forehead. The next day it increased, but the day after its violence seemed to lessen; but it continued more or less for several weeks. On my return home, I was connected with my wife.

“My mind became so much agitated that I found it impossible to be at peace till I unfolded my situation to a surgeon and apothecary.

“I began to fear that those affections of the head might arise from disease. The surgeon seemed to apprehend no danger. I pressed him to give me some opening draughts, to carry off the inflammation about the head, and flattered myself that they would also carry off any virus that I had contracted. Notwithstanding this, I still, however, found some of these disagreeable sensations, together with an uneasiness in the throat and teeth.

“All this time there was nothing more than usual in the genital parts, but a degree of heat not felt or observed before.

“I now conceived that this heat was increasing. By a constant and minute inspection, I found the size of the penis at times to diminish; the nut assumed a pale yellowish color, and the glands behind the nut seemed to be covered with mucus. The heat about the head diminished; the throat and teeth felt more uneasy.

“In the course of a fortnight after my return, I persuaded my apothecary to give me small doses of calomel. For the first few days they worked me very violently. The quantity of calomel was then lessened. All this time I felt no discharge of any kind, but after taking those medicines a few days I felt some heat and pain in the groin, and the penis seemed at times hot, and I felt some shooting pains about the head.

“A fortnight completed this course, and I now entered upon some alteratives. While taking them, my throat seemed to get worse and worse, but more so towards night.

“Six weeks after the connection I was pronounced well, and left off all medicines.

“Soon after this, in the mornings, prior to my making water, I perceived a small quantity of a whitish discharge on the opening of the lips of the urethra; never in quantity so large as a pea, and never but in the morning. I was induced to try what stain this would give to clean linen; it left a greenish spot. This was immediately communicated to the surgeon, who bid me think nothing of it, assuring me it was of no consequence.

“My mind was too unhappy to remain satisfied in this state, or with those assurances; I therefore had the advice of a physician.

“He said if I was affected it was in a very small degree, and that there was no possibility of my injuring my wife. Notwithstanding

which, he thought I had better take some medicines, which he would prescribe, for a fortnight, and then go on with my strengthening remedies. I now began taking these medicines. I took a large teaspoonful of an electuary three times a day; my throat soon began to feel better; after the fortnight the strengthening plan was begun.

“These medicines being left off, my throat became uneasy, as before; once or twice I discovered a discharge from the urethra, which was quite clear, and more glutinous than my water. This I always found was after erections.

“The strengthening medicines were continued about a fortnight. My throat felt very sore at night, and looked red all round. A hard reddish pimple now appeared in the roof of the mouth. These circumstances made me very unhappy.

“I now began taking an electuary, like the former, and drank a pint of decoction of the woods every day. This plan was adhered to for six weeks.

“I took strengthening medicines for about a fortnight, and then left them off.

“I used a variety of things for my mouth and throat; one time an electuary, and gargled with port wine; another time I gargled with a decoction of roses, honey, &c.

“I now find myself in a much worse situation than ever; for although I have never been disabled from pursuing my business, I have some additional disagreeable sensations; very unpleasant feelings in the shin bones, which affect me more after walking or standing, as if pins were pricking me. They are not violent, but disagreeable. My legs sometimes seem uncommonly stiff; there is a soreness in the knee, and in the hollow under the knee; a pain in the small of the back, sometimes in my arm. I think my corns, which are often troublesome, have been more so, especially in damp weather.

“About three months ago I discovered a spot on the inside of the right thigh, the size of a shilling, which at times assumed a copper color, but in common the color of the skin; but whenever heated it assumed this color. On the other side several more, of a lighter kind, have appeared. There are several small ones, of the size of a large pin's head, about different parts of the body, rising above the skin. There is no particular pain attends them.

“Within this week some very large spots have appeared about the neck, and the right side of the neck feels sore at times. For some time past my nose and forehead have felt different from what they used to do. There has been a heat, attended at times with a pricking and throbbing pain, with a stiffness that I cannot describe. The skin about the nose seems red. This instant there is a pain and stiffness felt in it. My eyes seem weaker than they used to be and sometimes look red. My mouth has been affected; the membrane appears pale and broken in some places. The saliva is very disagreeable; the breath is not offensive. Whenever I have wind in the stomach my throat is very sore indeed.

“It is necessary that I should observe that I am of a scorbutic habit,

which has always thrown out pimples betwixt my shoulders, down my arms, and sometimes some few in my face.

“When I returned home in May, I found my wife looking pale and weak. This I concluded to be the effect of breeding. It appears since, that on my return she must have been advanced about six weeks in her pregnancy. I prayed the surgeon to tell me if he thought there was any danger of my injuring her, and that, if there was, I would fling myself at her feet and inform her of what had happened. This I also told the doctor; both assured me there was no danger. Towards the latter end of June she seemed to have a slow fever. The apothecary attended her. She appeared very weak. By degrees she got better. In July she received a terrible fright, so that she became very poorly again, was very weak, and complained of an unusual discharge from the vagina. For this, through much persuasion, I got her to consent to have the doctor’s advice. This I pressed very much, as he was acquainted with all the circumstances that had attended me. I was very apprehensive that her complaints were now the effect of an injury received from me. I told the doctor of the discharge, prayed him to give her symptoms due consideration, and pressed him to prescribe such medicines as would effectually remove the complaint. He attended her, and assured me that there was not the smallest appearance of her complaints arising from such a cause. He said they were the effects of weakness and pregnancy. She never complained of any pain in the parts, nor of any heat in making water. At this time she was troubled with an almost unremitting pain in her teeth, gums, &c. The doctor prescribed some strengthening cordial medicines, which she continued to take for some time. She grew better, but was almost continually affected with pains in her teeth. This discharge lessened by degrees. Her habit was always disposed to be costive, but more so when with child. This the doctor accounted for from her habit, her being with child, &c., and assured me that everything was perfectly natural, and that there was not the smallest appearance of anything arising from disease. About a month or more before she was brought to bed, those complaints in her teeth, ears, and head seemed to increase, a redness appeared over her eyebrows, where there was great pain, &c.

“At this time I observed some little spots about her face, of a yellowish color, one in her forehead, two or three less near her ears, &c., and some few on her arms.

“At length she was brought to bed; had a fine child, perfectly healthy. Her teeth were still sore, the right side of her cheek so much so, that she could not bear it to be touched. Her left breast began now to be very troublesome, and the more so as the milk advanced. (In this breast she always complained of a pain from her first child, and sometimes she fancied she could feel a hard lump.) Both her nipples were very sore, were surrounded with little ulcerations; but the left was by far the worst. It was very painful to her to give suck; she was obliged to have her breasts drawn now and then. Her nipples got better by degrees, and she now tells me they

are well. There was early after she had children a redness betwixt the breasts; but this also went off.

“There now seems a little redness on each side of her nose near her eyes, and sometimes the tip and sides of her nostrils appear red. She says there is no pain. Her pain is now in the left gums, and extends through to the cheek. Her water is frequently very thick, and there is, very soon after it is discharged, an evident sediment in it.

“The infant is free from all appearances of disease, but at present is afflicted with the snuffles to a degree that exceeds anything of the kind that I ever saw in any of our other children. I am always disposed to anticipate the worst, and it pains me very much, lest it should arise from this general source of evil. The child is hearty, thrives very well, sleeps well. Two children that are at home have now and then been poorly; in the corners of their mouths there was, for weeks, an evident excoriation, assuming a whitish color. This, I think, is now gone. There seem some small pimples about the neck, very small, and there are two or three of these small spots about each of them; and sometimes their noses are red and sore. Indeed, my mind has been afflicted with an idea that I have by this unguarded act injured my whole house. My situation is truly wretched. I have made up my mind to take time by the forelock, to attack this disorder very early; but, alas! I am afraid I have fallen into bad hands.

“This business involves a great variety of questions of the first importance to me. The questions, with their answers, must be referred to your better judgment; I will state two or three for our satisfaction.

“If my complaints arise from lues, is it possible for me to have injured my children by kissing them, sleeping, &c.?

“If my wife's discharge was venereal, would it not most likely have produced a similar one in me? or would not my having received the lues into my habit prevent it?

“Are those pains in the head, teeth, ears, &c., likely to arise from this cause? If my wife's nipples had been affected from the complaint, would the person that drew her breast be infected? and if so, how long, and in what manner would her infection appear? Would the nipples have got well had this been the case? Can the child's snuffles arise from this cause? Can any part be injured by this complaint without manifest inflammation, swelling, and discharge?

“I have only to add that I pray you, sir, to be good enough to give this complex and unhappy case every necessary attention. I should wish for effectual relief.”—HOME.]

§ 1. *Of Diseases supposed to be Venereal produced by Transplanted Teeth.*

Since the operation of transplanting teeth has been practised in London, some cases have occurred in which the venereal infection has been supposed to be communicated in this way, and they have been treated accordingly; nor has the method of cure tended to weaken the suspicion; yet when all the circumstances attending them, both in the mode of catching the disease, and in the cure, when they have

been treated as venereal, are considered, there is something in them all which is not exactly similar to the usual appearance of the venereal disease when caught in the common way; especially too when it is considered that some of the cases were not treated as venereal, and yet were cured, and therefore the cure of the others, which appeared to be from mercury, are not clear proofs of their having been venereal.¹

I believe that I have seen most, if not all, the cases of this kind which have occurred, and have attended some of them. In all of them the time of local affection, after the insertion of the teeth, has been almost regularly a month, which is too long for the venereal to take effect at a medium; and where they have produced constitutional symptoms, those again have either followed the local too close for the venereal, or too regular as to time. But it may be advanced, that a disease has been produced probably as bad in its consequences as the venereal. That a disease has been formed in this way is certain.

The first case of this kind which came under my care was a lady who had one of the bicuspidati transplanted. The transplanted tooth fastened very well. About a month after she danced till five or six o'clock in the morning, caught cold, and had a fever in consequence, which lasted near six weeks. In this time ulceration in the gum and jaw took place, though it was then not known. And when she was beginning to recover it was found that not only the gum and socket of this tooth were diseased, but also those of the teeth next to it. The two teeth were taken out, and the sockets of both afterwards exfoliated; but the parts were very backward in healing.

This backwardness gave rise to various opinions, the principal of which was, that it was venereal. In the mean time a rising appeared upon one of the legs, which was of the indolent node kind; this was also suspected by some to be venereal, or rather was a corroborating circumstance of the former opinion; but I gave it as my opinion that it was not. I desired she might go to the sea and bathe, which she did, and got perfectly well, both in the jaw and leg, and has continued so ever since.

The second case of this kind I have seen was also in a young lady. The transplanted tooth fastened extremely well, and continued so for about a month, when the gum began to ulcerate, leaving the tooth and socket bare. The ulcer continued, and blotches appeared upon the skin, and ulcers also in the throat. The disease was treated as venereal, the complaints gave way to this course, but they recurred several times after very severe courses of mercury; however, she at last got well.

The only observation I can make on this case is, that the symptoms recurred after continued courses of mercury much oftener than is usual

¹ It is to be remarked here that I do not, in the present case, lay any stress at all on my opinion of the lues venerea not having the power of contamination; and I believe we must allow, if the disease were venereal, it must have been contracted from a lues venerea in the person from whom the tooth was taken; for chancres are not common in the mouth, and they would be seen on examination. I believe few discharges similar to gonorrhœa take place there.

in venereal cases, and I had my suspicions all along that it was scrofulous.

The third case was of a gentleman, where the transplanted tooth remained without giving the least disturbance for about a month, when the edge of the gum began to ulcerate, and the ulceration went on till the tooth dropped out. Some time after spots appeared almost everywhere on the skin; they had not the truly venereal appearance, but were redder or more transparent, and more circumscribed. He had also a tendency to a hectic fever, such as restlessness, want of sleep, loss of appetite, and headache. After trying several things, and not finding relief, he was put under a course of mercury, and all disease disappeared according to the common course of the cure of the venereal disease, and we thought him well; but some time after the same appearances returned, with the addition of swelling in the bones of the metacarpus. He was now put under another course of mercury more severe than the former, and in the usual time all the symptoms again disappeared. Several months after the same eruptions came out again, but not in so great a degree as before, and without any other attendant symptoms. He a third time took mercury, but it was only ten grains of corrosive sublimate in the whole, and he got quite well. The time between his first taking mercury and his being cured was a space of three years.

Query: Could this case be venereal? The first two courses of mercury removing the eruptions would seem to prove it was; but the third course also removing them, which consisted of only ten grains of corrosive sublimate, would seem to prove that it could not be venereal; for if it had, the appearances which returned after the second course, in which a considerable quantity of mercury had been given, would not have yielded to ten grains.

The fourth case was that of a young lady who had a tooth transplanted, and about the same distance of time after it, as mentioned in the former cases, the gum began to ulcerate, and the ulceration was making considerable progress. The surgeon who was first consulted desired mercury to be given immediately. I was afterwards desired to see her, and advised that mercury should not be had recourse to, that we might ascertain the nature of the case; for if she took mercury and got well, it would be adding one more to the number of the supposed venereal cases arising from such a cause. I recommended drawing the tooth, that we might see what effects would be produced by the removal of the first cause. The tooth was drawn, and the gum healed up as fast as any common ulcer, and has ever since continued well.

This case requires no comment. I may, however, be allowed to observe, that if the lady had gone through a course of mercury, she would have, in all probability, also got well; for the tooth, in the time necessary for completing the course of mercury, would have dropped out; and if this had really happened, we need not hesitate in affirming that it would have been considered as venereal.

The fifth case was that of a young lady, eighteen years of age, who had one of the incisors transplanted, which fastened very well; but six or seven weeks after the operation, an ulceration of the gum took place,

the tooth was immediately ordered to be removed, and the bark was given without any other medicine, and she got well in a few weeks.

The sixth case was that of a gentleman, aged twenty-three, a native of one of the West India Islands, who had the two front incisors transplanted; and about the same time after the operation, as in the former cases, an ulceration of the gums took place, which increased to a very great degree, and the edges of the gum sloughed off. An eminent surgeon was consulted, who ordered the bark; and the patient, without taking any other medicine, got well in nearly the same time as the ladies in cases four and five, who had the teeth taken out. The gums recovered themselves perfectly, but were considerably shorter.

If we take some of the above cases, and consider them as they at first appeared, we shall almost pronounce them to have been venereal. If we take the others, we shall pronounce them absolutely not to be venereal. And if we consider every circumstance relating to those probably venereal, we shall, as far as reasoning goes, conclude that they were not venereal. The first case that appeared at the time to be venereal is the second of those before related; but, as I did not attend the lady through the whole of the cure, I can say less upon it. She certainly had the symptoms recur oftener than they do in venereal cases in common, where the disease is attended with no ambiguity, and took more than the usual quantity of mercury. There is, therefore, in this case, something not clearly understood, because it does not exactly agree with venereal cases in general in all its parts.

The fourth case was similar in its recurring, and in the quantity of mercury that appeared to be necessary to remove the symptoms.

The most serious effects of transplanting a tooth happened to a young lady, and are related, in the *Medical Transactions*, iii. 25, by the late Sir William Watson.

The dentist, being alarmed at the first appearance, desired me to visit her upon his own account. The edge of the gum had just then begun to ulcerate. As I did not know well what was best to be done, I desired him to make a strong solution of corrosive sublimate, and let the mouth be often washed with it, and also to apply some lint, soaked in it, to the part; but as this did not stop its progress, she applied to Sir William Watson, to whose account of the case I must refer the reader, and from that account I must take my materials to reason upon. However, I may remark, that the case appears to have been supposed at last to be venereal, whatever might have been the first opinion, and for the two following reasons: First, from the mode of catching the disease being possible; and, secondly, from its not giving way to medicines which are of no service in the venereal disease; and this opinion appears to have been confirmed by the disease giving way to mercury. But the case itself, abstracted from the mode of catching it, and even the mode of cure, does not perfectly agree with the common attending circumstances of the venereal; nor has that attention been paid to the necessary circumstances sufficient to determine it to be venereal.

The progress of the ulceration in the mouth, which was the first symptom, was by much too rapid for a venereal ulcer in common; for,

it must be considered, if venereal, simply as a chancre or local affection.

Now, let us trace the progress of the disease into the constitution. "About this time," viz., when the local disease was making such rapid progress, "blotches appeared in her face, neck, and various parts of the body; several of these became ulcerated painful sores." Now this date of the constitutional affections following the local is by much too soon to be venereal; we know if a lues venerea arises either from a gonorrhœa or chancre, it does not appear in common till about six weeks, often much later, but seldom sooner. I do not count much upon the circumstance of there being no swelling of the lymphatic glands of the neck, forming buboes, as that is not a constant symptom attending the venereal matter getting into the circulation, although it should be allowed to have some weight, especially where other circumstances do not perfectly agree. The appearances from the constitution, when they did take place, were much more violent and rapid in their progress than any venereal blotches I ever saw. We know in the lues venerea that they are months before they arrive at the stage of scabs; also the pain attending those sores did not in the least correspond with the lues venerea. Venereal blotches hardly give any sensation, or at least very little; but, after all, mercury cured this disease, whatever it was. Twenty-eight grains of calomel, made into fourteen pills, were taken, probably in ten or twelve days, for it was directed she should take one or two each day, as the bowels would allow; but, although tinctura thebaica was given, they purged so much as made it necessary to give no more in this way. But although so little mercury was taken, and had also run off considerably by the bowels, yet "the ulceration of her mouth and cheeks did not spread, but was less painful and of a milder appearance; the blotches in her face and body grew paler, and such of them as had ulcerated healed apace and no new ones appeared. Unguentum cœruleum fortius" was therefore directed "to be well rubbed into her legs and thighs twice a day, in small doses," lest it should be determined to the bowels. "In about ten or twelve days her griping and purging returned with violence, the ointment was therefore discontinued. At this time the blotches were all gone; the ulceration in her face and body were completely healed, and those of her mouth nearly so." [*Op. cit.*, p. 328.]

The only remark I have to make on the cure is, that the quantity of mercury was not sufficient to cure chancres on the penis, making such rapid progress as those did in her mouth; nor could the same quantity of mercury cure venereal sores on the skin, which had made such rapid progress as they did in this case; and if we take in the effect this had upon her health, with the termination of the whole, I think we should pronounce it not venereal; for the specific circumstances, if it was venereal, were just as uncommon as the mode of catching it.

Many of these cases, suspected of being venereal, I have seen occasionally; and although the patients recovered while under a course of mercury, yet on account of the want of attention in the practitioners

to the very circumstances that would decide the disease to be either venereal or not, I pass them over unnoticed.

After having considered the cases themselves of those who had the teeth transplanted, let us also consider the persons from whom the teeth were taken; for I cannot help thinking that this will throw some light upon the subject. Let me suppose that the young girls from whom the teeth were taken really had the lues venerea, and that the teeth were of course also infected, which is a supposition most unfavorable to my real opinion; it appears to me that, even in this case, there can be no difference between the gums of the girl from whom the tooth was taken, and the gums of the person who received it. If the ulceration took place in the last from contamination, would not the socket in the girl from whom the tooth was taken likewise have ulcerated? But this did not happen in any of them. I have here supposed the teeth capable of being contaminated; although I believe we have never yet seen them have this disease primarily, but only in consequence of its breaking out somewhere else, in the mouth, throat, or nose, and spreading to them. But still, if they are capable of having the disease, and communicating it to others, it becomes very extraordinary that those people should have hit upon the few teeth that probably were ever so contaminated.

When we consider that the girls from whom the teeth were taken had not the least appearance of disease at the time, and had none when the disease broke out in the person who received the teeth, it becomes strange that it should break out in the receivers and not in the giver.

It is also singular that an ambiguity should follow this disease in all its stages; in the mode of its being caught, the appearance, and the cure.

Let us sum up all the arguments in favor of the disease not being venereal. First, two patients, whose cases were similar to the others in their origin, recovered without medicine. Secondly, they who seemed to be cured by mercury had not a treatment exactly similar to those who were indisputably poxed. Thirdly, I consider it as impossible for parts to have the power of contaminating which are not themselves diseased. Fourthly, the parts contaminating were never known to have been contaminated themselves. But it must be nearly the same thing to those who want to have teeth transplanted, whether my reasoning is just or not; for a disease in consequence of the operation most certainly has taken place; and in some cases this has been worse, or cured with more difficulty, than the lues venerea in common; and whatever the disease may be, I yet know of no mode of prevention, except the drawing of the tooth early, and that has been tried in one case only, and in that case was successful.

From this account, many may be deterred from having this operation performed. In that light no evil can arise, except the mortification which arises from a reflection that no relief is to be had in cases of bad teeth. But it is to be remembered that this is a publication of all the unsuccessful cases, which is the very reverse of what is generally practised in medical books; and they are mentioned upon no

other principle than that the disease, when it happens, may not be improperly managed.

It may be asked, what is this disease? There is more difficulty in answering what it is, than what it is not. I should say that a sound tooth transplanted may occasion such an irritation as shall produce a species of disease which may be followed by the local complaints above mentioned.

I cannot conclude without intimating that undescribed diseases, resembling the venereal, are very numerous; and that what I have said is rather to be considered as hints for others to prosecute this inquiry farther, than as a complete account of the subject.

EXPLANATION OF THE PLATES.

PLATE I.

FIG. 1. The penis slit open, showing a stricture in the urethra, about two inches from the glans. The stricture is but slight. A A the cut surface of the corpus spongiosum urethræ. B B the canal of the urethra, in which may be observed the orifices of the lacunæ. C the stricture.

FIG. 2. The penis slit open for about three inches, to show the lacunæ, which become occasionally an obstruction to the passage of the bougie. A A the corpus spongiosum urethræ. B B the internal surface of the canal of the urethra, pointing to the orifice of two of the lacunæ. C a bristle introduced into a lacuna. D the end of the bougie introduced into the remaining part of the urethra.

PLATE II.

The urethra opened in two different places, one before the stricture, the other behind; the one before is through the body of the penis, the other behind is upon the anterior surface of the membranous part; and a bougie passes from the one opening to the other. A A the crura penis and bulbous part of the urethra, all blended together by inflammation and suppuration, which has taken place in many parts. B B the prostate gland in a diseased state. C C the cut edges of the bladder. D the urethra behind the stricture, very much enlarged; irregular on the surface in consequence of ulceration. E E the cut surfaces of the corpora cavernosa penis. F F the cut surfaces of the corpus spongiosum urethræ. G G a bougie passing from the sound to the unsound part of the urethra. H a small bougie in the new passage.

PLATE III.

Two Canulas for applying Caustic to Strictures in the Urethra.

FIG. 1. A straight silver canula, with the plug projecting beyond the termination of the canula, making a rounded end; at the other end of the wire is a small port-crayon, in which is represented a piece of caustic.

FIG. 2. A flexible canula, for applying caustic to strictures in the bend of the urethra. The wire with the small port-crayon is pushed out beyond its end.

FIG. 3. A piece of silver wire with the plug at the end, to be introduced into the canula, as in Fig. 1.

M. Ricord's Urethral Coarctotome and Porte-caustique.

FIG. 4. Curved *coarctotome*, reduced to two-thirds the size of the original, and broken in the centre.

FIG. 5. Blade of the *coarctotome*, its stem bearing a slide or graduator (size of the original).

FIG. 6. Conductor (size of the original).

M. Ricord's *coarctotome*, consisting of only three pieces, is incontestably the most simple and solid instrument of the kind invented, and its mechanism is such, that it acts like a bistoury directed with certainty upon the stricture, by means of a director. The action of the instrument is extremely simple. The blade, Fig. 5, the shape and size of which may be changed at will, is moved by means of a strong stem, and can be withdrawn and entirely concealed within the conductor, Fig. 6, to allow of the introduction of the instrument; a scale suitably graduated upon the latter, also enables us to arrive exactly at the constricted part, the depth of which should be previously measured by an ordinary explorer.

The slide, which, by means of the screw, *b*, Figs. 4 and 5, can be fixed to any part of the scale marked upon the stem at the point *c*, indicates the projection of the blade when pushed forwards, as in Fig. 4. The blade, in this position, rises upon an inclined plane, which forms the termination of the groove of the conductor, and presents a cul-de-sac superiorly, which receives a little catch, *a*, placed at the extremity of the blade, Fig. 5, and in this way prevents the escape of the latter from the groove of the conductor, and allows its cutting edge to be directed with the greatest regularity. By drawing back the stem, the blade is made to re-enter the conductor, and the instrument may be withdrawn without fear of wounding the urethra. It is no small advantage in M. Ricord's instrument that it can be thoroughly cleansed with the greatest ease, and thus preserved from rust, which, in all complicated scarificators, often impedes the motion of the parts on each other, and what is a much more serious inconvenience, corrodes them and makes them liable to break during an operation.

FIG. 7. *Porte-caustique*.—In a single instrument, M. Ricord has combined all the advantages of the best *porte-caustiques*. A gum-elastic canula, furnished at its extremities with metallic armatures, of which the superior one is surrounded by a small disk presenting two screws *d d*, to fix the different parts in place, is designed to stop before the stricture and thus determine its anterior border. Within the outer tube or canula, is a second canula *a a*, which is pushed forwards so as to pass through the part that it is designed to cauterize: this done, by a rotatory movement the eccentric knob terminating the stylet *b b'* is made to project laterally. This knob serves to grasp the posterior border of the stricture, which is then included between it and the extremity of the external canula. The instrument being thus arranged, by withdrawing the canula *a a*, the curette *b* is exposed and the melted nitrate of silver which it contains applied to the adjacent parts, or, by giving a rotatory motion to the stylet supporting the curette, the whole circumference of the canal may be cauterized.

PLATE IV.

The bladder and penis of a person who died of a mortification of the bladder in consequence of a stricture and stone in the urethra. In this plate not only the stricture is represented, but the thickened coats and fasciculated inner

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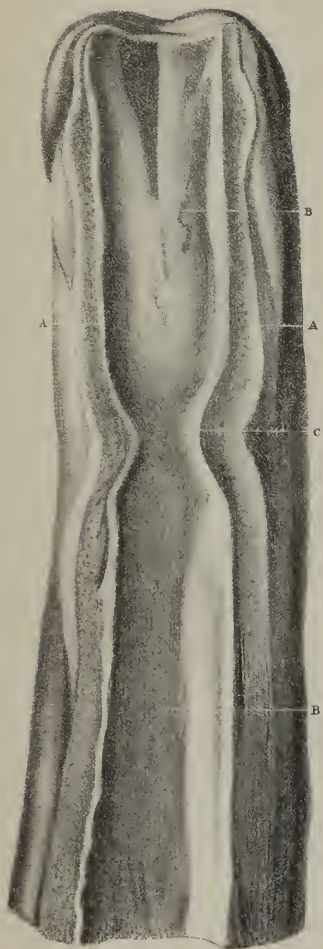


Fig. 2





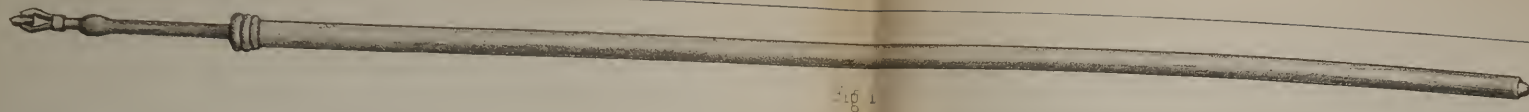


Fig 1

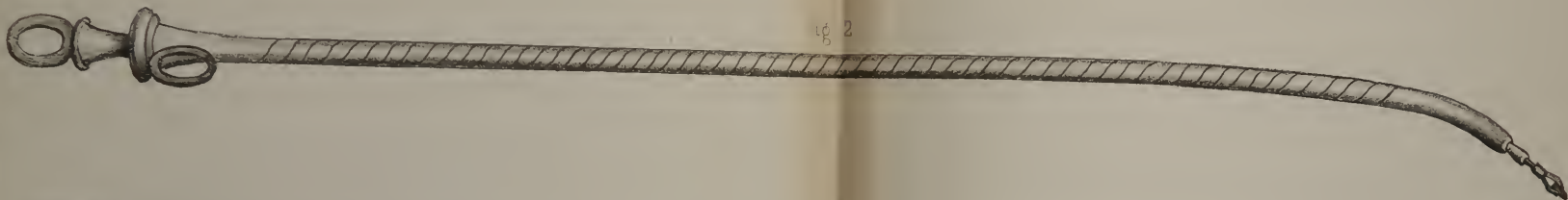


Fig 2

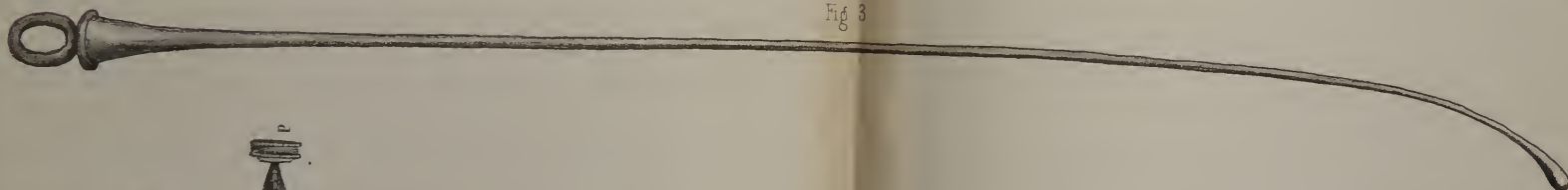


Fig 3

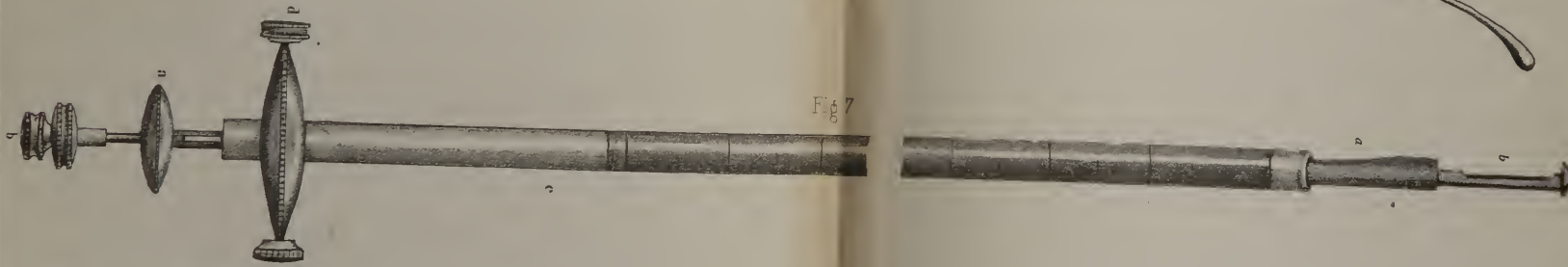


Fig 7

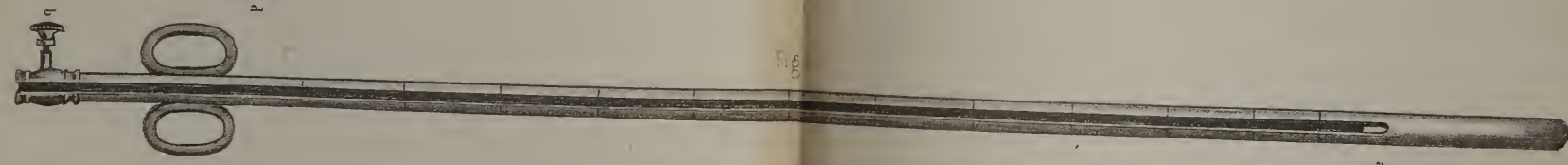


Fig 8

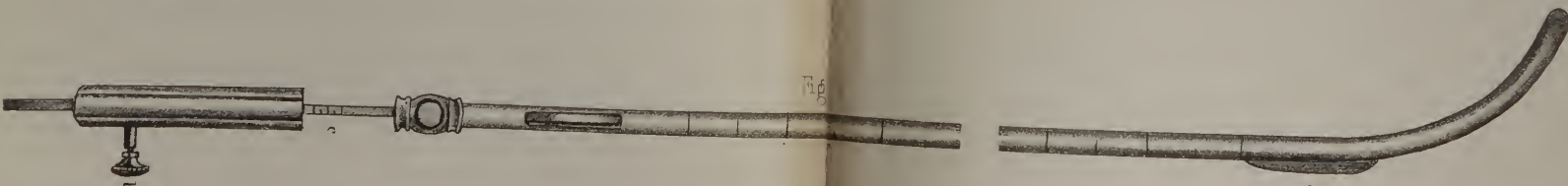


Fig 9

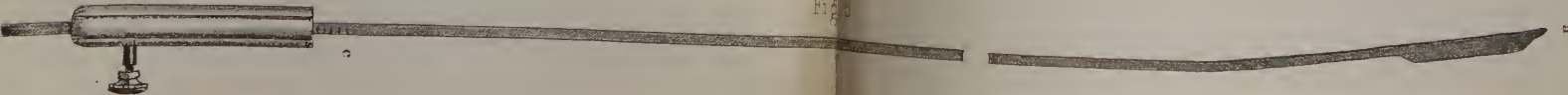
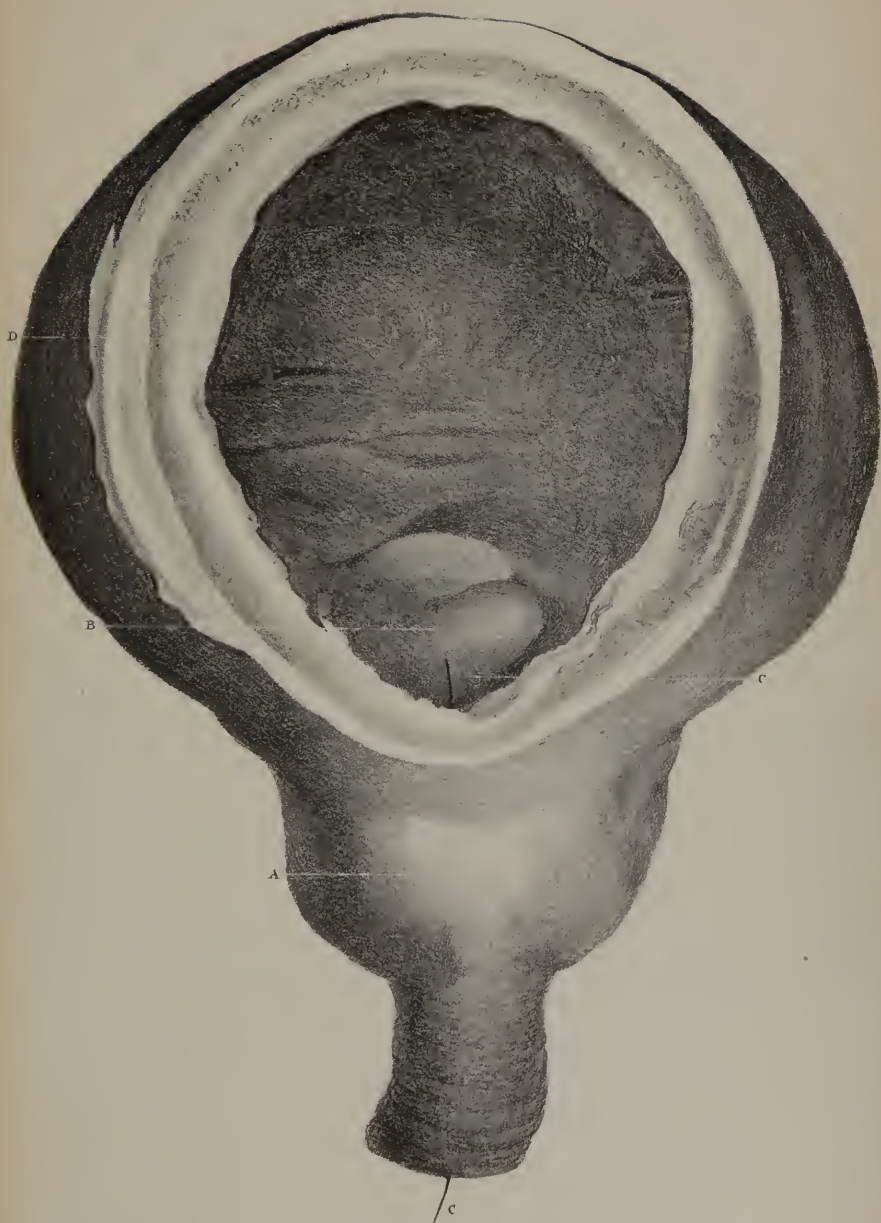
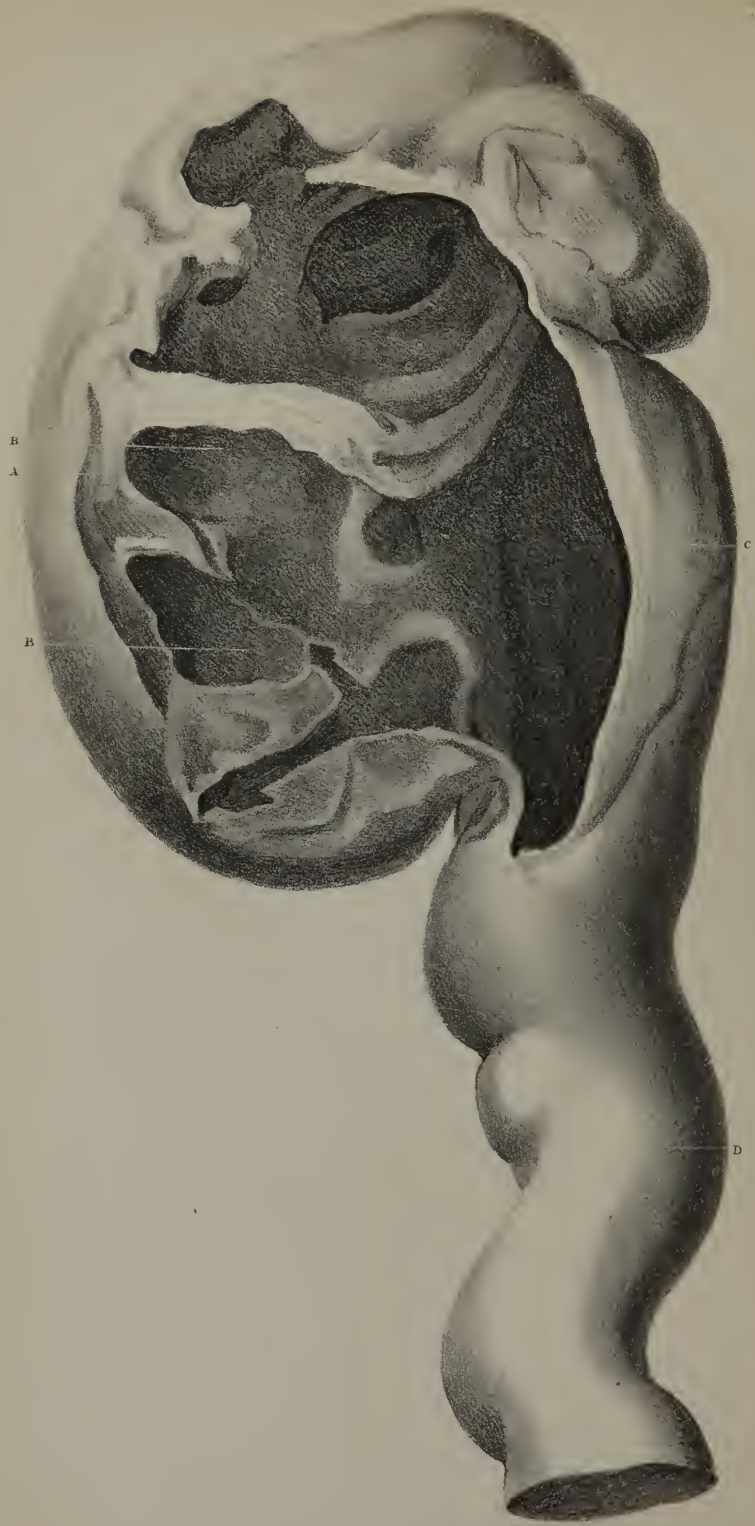


Fig 10







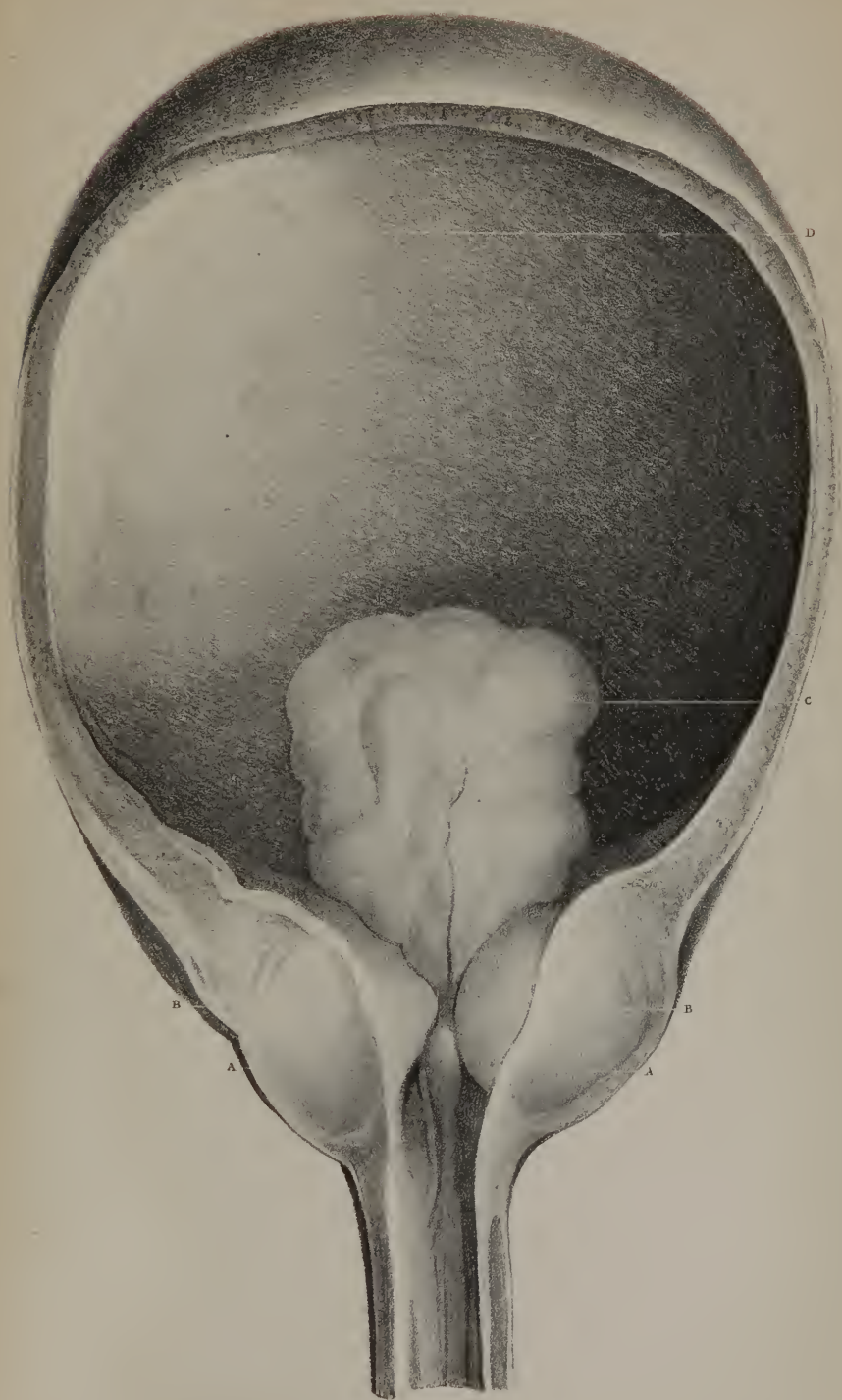




Fig. 2



Fig. 1

surface of the bladder; as also the small stone, which acted as a valve or plug; beside which a canula is introduced from the glans down to the stricture, showing the practicability of destroying it with caustic. A A the bladder, cut open, showing its coats a little thickened, and its inner surface fasciculated. B the body of the penis. C C the corpus spongiosum urethræ cut open, through its whole length, exposing the urethra. D the prostate gland divided. E a silver canula introduced into the urethra, through which the caustic is passed on to the stricture. F points out the stricture, with the stone lying above, so as entirely to prevent the passage of the urine.

PLATE V.

An enlarged prostate gland, particularly the valvular process, which has increased inwards, into the bladder, in form of a tumor; in consequence of which the water passed with difficulty, which became the cause of the increased thickness of the bladder. A the prostate gland. B the projecting part passing into the cavity of the bladder. C C a bristle in the urethra, to show it is above this tumor. D the cut edge of the bladder, which shows its increased thickness.

PLATE VI.

A, kidney; the ureter, pelvis, and infundibula of which are very considerably enlarged in consequence of a stricture in the urethra. A, the substance of the kidney, which has become very thin. B B the infundibula, much enlarged. C the pelvis very much enlarged. D the ureter increased more than ten times its natural size.

PLATE VII.

The valvular part of the bladder, so increased as to form a considerable tumor, projecting into the cavity of the bladder. The prostate is also enlarged. This tumor had been the occasion of several severe suppressions of urine, and had often been the cause of a failure in drawing off the water with a catheter, by that instrument, most probably, passing into its substance so deep as to hinder the urine entering its openings. The dark line, passing along the tumor from the urethra, was probably made by this means, but now collapsed. A A the cut surfaces of the prostate gland. B B the inner side of the prostate gland projecting inwards. C the tumor. D the cavity of the bladder.

PLATE VIII.

*Pathological Specimens presented by M. Ricord to the Academy of Medicine.*¹

CASE FIRST.—Boisseau, a draughtsman by profession, aged 52, entered the Hôpital du Midi, April 2, 1836. He had had four attacks of gonorrhœa, but could not state the exact time of their occurrence. The first three affections disappeared readily, and in a short time, under the use of cooling drinks; but the discharge in the last, though slight at first, gradually became very abundant and painful, and after continuing two months without treatment was

¹ See the *Bulletin de l'Académie de Médecine*, 1838, t. ii. p. 506.

complicated with epididymitis of the right testicle, which had lasted a week at the time of his entrance to the hospital, when he was found to have a hydrocele in the acute stage, which was punctured.

Leeches were twice applied over the course of the spermatic cord, and the serotum covered with poultices. A slight diminution took place in the volume of the tumor; but the pain, which had disappeared almost immediately after puncturing, the testicle having been thus relieved from the pressure exercised by the liquid inclosed in the tunica vaginalis, returned on the third day in consequence of a fresh effusion, which was also evacuated; finally, the fluid having accumulated a third time, M. Ricord, notwithstanding the acute stage, injected the sac with a vinous infusion of roses of Provins, and a cure resulted as in the most simple cases.

The gonorrhœa, which had been very painful from the first, furnished a greenish pus, mixed with a few streaks of blood, and, on being inoculated upon the patient's left thigh, gave the characteristic pustule of a chancre. Finally, on the 14th of June, the epididymitis and hydrocele were perfectly cured, but the discharge continued much the same, in spite of the use of cubeba and copaiba. Boisseau was obliged to leave the hospital, on business of his own, but returned June 21, with epididymitis on the left side, complicated with hydrocele. The tunica vaginalis was very tense, and severe pain was felt in the testicle. M. Ricord evacuated the fluid by puncture, and the pain disappeared; he afterwards introduced a mesh within the sac, in order to prevent a new effusion. In spite of antiblennorrhagics, and astringents, the use of which was resumed, the discharge became more and more abundant; the patient appeared very much depressed, and night-sweats, rapid and general marasmus, and constipation followed. A light purgative was given, and followed by a fetid evacuation; the urine became thick, and contained shreds of pus; the prostration increased, and finally death ensued August 4.

FIG. 1. (*Autopsy*.)—The urethra *b*, and the bladder *c*, having been opened on their superior surfaces, the canal was found to be destroyed throughout its membranous and prostatic portions, and hollowed out by deep ulcerations *ddd*, having all the characters of primary phagedenic ulcers; the prostate *e* was deeply involved; in front, a fragment of the urethra *f*, adherent at its base, but detached from the subjacent parts and rounded and hypertrophied, was floating in the pus; behind, there was also a wider fragment, *g*, hard and thickened. Within the bladder were found several rounded ulcerations, *hhh*, with their edges cut perpendicularly, and presenting the characters of primary syphilitic ulcers, which had destroyed the whole thickness of the mucous membrane. Among these ulcerations, most of which were in the progressive stage, there were some which were almost cicatrized, and towards the vesicle trigone several slight depressions with smooth whitish surfaces indicated the presence of cicatrices.

The left vesicula seminalis inclosed a collection of pus, which had destroyed its central portion, and communicated with the surrounding cellular tissue by rounded openings, the edges of which were clearly cut. On the same side, the vas efferens and vas deferens, ulcerated and filled with pus, communicated with the disorganized epididymis, of which the envelop, as it were, alone remained. The presence of the pus had even affected the testicle, on the surface of which several bands of false membrane were seen forming adhesions with the corresponding parts of the tunica vaginalis; no operation, however, had been performed here, as above stated, except a simple puncture to relieve the pressure. The right vesicula seminalis was sound, and also the corresponding testicle, in which the vinous injection had produced complete adhesion of the two folds of the tunica vaginalis.

In concluding this observation, we believe it important to call attention to the fact that nothing but antiphlogistic balsams and astringents were ever employed in Boisseau's gonorrhœal affection, and that he had never made use of injections, and had never been sounded.

CASE SECOND.—Bourdon (Adolphe), aged eighteen years, a gilder by trade, entered the hospital August 16, 1836. A few days after a suspicious connection, this patient perceived a chancre situated on the corona glandis, near the frænum; no treatment was opposed to the progress of the ulcer, which extended to the neighboring tissues. The meatus was red and swollen, and there escaped from it at first a little bloody matter, and afterwards pus, the quantity of which gradually augmented, till at last it had the appearance of a copious urethral discharge. The emission of urine excited pain of some severity. After some necessary labor and certain excesses in which Bourdon engaged, his prepuce, which was previously narrow, became œdematous, and a phimosis ensued, which compelled the patient to present himself to the hospital. It was designed to perform an operation on the inferior surface of the prepuce, but the incision encroached upon the side; the edges of the wound, inoculated by the virulent pus, became ulcerated, hard, and thickened.

The disease progressed with considerable rapidity. In spite of the various means which were used, the whole of the corona glandis ulcerated, and the lips of the meatus urinarius were destroyed by a chancre. Finding no relief, Bourdon returned home; but a few days after he presented himself at the consultation of M. Ricord. Being admitted to the hospital, Bourdon appears very feeble, in consequence of excessive emaciation. His digestive functions, however, go on regularly; he has a little cough, and his chest presents a slight dulness towards the upper part of the right lung; his respiration is free; no trace of a syphilitic eruption is noticed on the skin. The corona glandis and meatus urinarius, and the edges of the wound resulting from the operation for phimosis are ulcerated, and present the external characters of a chancre in the period of progress. The discharge is abundant and slightly sanious; the emission of urine is very painful, especially towards its close, and the last drops of this fluid bring away some shreds of blood. The passage of the feces excites pain in the region of the neck of the bladder. On inoculating the matter of the urethral discharge upon the left thigh, on the third day a pustule has formed, which is deeply cauterized with nitrate of silver, and the ulcerations are dressed with a concentrated solution of opium.

September 4, the acute stage continues, attended with much pain. The pustule on the thigh was destroyed by the cauterization. A pomade of calomel and opium is used for the dressing. September 20, the patient complains of incontinence of urine; the vesical tenesmus, which he has experienced for some time, is a little less severe. His emaciation constantly increases, and his debility is extreme. During the months of October and November, the morbid symptoms are aggravated; the urine oozes away incessantly, and an obstinate diarrhœa supervenes. M. Ricord attributes the incontinence of urine to the ulcerations having involved the neck of the bladder. In the early days of December, the condition of the patient appears beyond relief; his marasmus makes rapid progress, and finally death occurs, December 20.

FIG. 2. (*Autopsy.*)—The urethra *c*, and the bladder *b*, having been divided superiorly, it is found that the ulceration of the meatus urinarius, *f*, extends within the urethra to a distance of four lines; an inch farther back, another oblong ulceration *g*, eight lines in length and four in width, has

destroyed the whole thickness of the mucous membrane. The membranous and prostatic portions of the urethra, the neck of the bladder, and the prostate itself, are the seat of a large ulceration, having all the characters of a serpiginous phagedenic chancre, and presenting here and there rounded depressions *h, i, j*, with perpendicularly cut edges. Scarcely any traces remain of the neck of the bladder; the lateral lobes of the prostate are replaced by two large irregular excavations *k, l*, communicating with each other beneath a ribbon *m*, formed by a fragment of hypertrophied mucous membrane. The capacity of the bladder is diminished one-half; its mucous membrane has disappeared, and is replaced by a mammillated surface, resulting from hypertrophy of the granulations upon an ulceration in the reparative stage; the edges of the incision *d d*, which divides the organ perpendicularly, are twice as thick as in the normal state.

FIG. 3. On the corona glandis *a* is seen a circular ulceration, some parts of which are in the reparative stage; the prepuce is hypertrophied, and the edges *b c* of the wound made in the operation for phimosis, are ulcerated; the chancre at the meatus urinarius, *d*, is everywhere healing.

Capsules of copaiba, 135.
 Caries, treatment of syphilitic, 507.
 Cauterization of chancres, 320.
 strictures, 182, 188.
 Cellular tissue, syphilitic affections of, 460.
 treatment, 507.
 Chancre, 283.
 concealed, 55, 325.
 dependent on virulent pus, 44, 46.
 development of, 46, 284, 293.
 diagnosis of, 298, 300, 302.
 duration of, 295, 300, 304.
 indurated, 295, 302.
 infecting, 302.
 inflammatory, 298.
 in women, 303, 313.
 necessary condition of the tissues
 for, 291.
 parcheminé, 303.
 phagedenic, 297, 304.
 regular, 294.
 serpiginous, 297.
 simple, 299.
 superficial, 303, 326.
 transmission of, 301, 307.
 treatment of, general observa-
 tions on, 315.
 cauterization, 318.
 constitutional, 340, 342.
 duration of, 497.
 rules for, 498.
 when required,
 343.
 in women, 346.
 local applications, 322.
 when sufficient, 325,
 344.
 two stages of, 294.
 variations in reparative stage of,
 298, 300, 304.
 varieties of, 295, 299.
 Chlorate of potassa in mercurial salivation,
 502.
 Chordee, 87.
 Ricord's pills for, 326.
 treatment of, 140.
 Circumcision, 338.
 Concealed chancre, 55.
 cases of, 545.
 treatment of, 325.

Condoms, 517.

Constitutional syphilis, 393.

attacks a person but
once, 305.

Hunter's division in-
to two stages, 418.

order of appearance
of the symptoms
in, 420.

premonitory symp-
toms of, 437.

treatment of, gene-
ral remarks on, 465.

use of mercury in,
467, 496.

Contagion of venereal diseases, 516.

Copaiba, 128.

Copper color of syphilitic eruptions, 439.

Cubebs, 135.

D.

Dilatation of strictures, 178.

Discharge, gonorrhœal, 68, 84.

effect of, when taken
internally, 398.

in females, 106.

Dupuytren's pomade for the hair, 506.

E.

Ecthyma, 445.

Emery's tar ointment, 505.

Epididymis, obliteration of, 239.

persistent induration of, 159.

Epididymitis, 90.

causes of, 93.

complications of, 94.

effect of, upon the gonor-
rhœal discharge, 95.

treatment of, 141.

Epilepsy, dependent on syphilis, 37.

Erections, avoidance of, 326.

Exanthematous syphilitic eruptions, 440.

Exploration of the urethra, 166.

Eyes, syphilitic affection of, 448.

treatment of, 505.

F.

False passages, 202.

causes of, 206.

parts of urethra most sub-
ject to, 206.

prognosis of, 208.

symptoms of, 207.

treatment of, 208.

Female, gonorrhœa in the, 101, 105.

Fistulæ, urinary, 221, 225.

treatment of, 226.

Fœtus, syphilis in the, 451.

G.

Gleet, 150, 156.

prophylaxis as applied to, 516.

relation of, to gonorrhœa, 146.

treatment of, 153, 156.

Gonocœle, 275.

Gonorrhœa, 67.

are there two kinds of? 56, 72.
causes of, 78.

difference between gonorrhœa
and chancre:—

theory of *Hunter*, 50.

Hufeland, 57.

Rose, 57.

Swédiaur, 57.

Lagneau, 57.

effect of habit upon, 78.

facility of curing, compared
with that of chancre, 465, 495.

identity of, with chancre, 48,
51, 54, 57.

incubation of, 69.

in women, 101, 105.

relapses in, 74.

results of experimental inocu-
lation upon, 52, 55, 432, 452.

seat of, 79, 86, 88.

symptoms of, 82.

discharge, 68, 84.

pain, 88.

synonymous terms with, 68.

treatment of, 109, 125.

abortive, 125.

antiblenorrhagics,
128.

astringents, 112,
136.

constitutional, 120.

direct, 126.

evacuants, 112, 136.

indirect, 128.

injections, 114, 126.

in women, 119, 136.

mercurials, 113,

122, 137.

palliative, 126.

Gonorrhœal ophthalmia, 268.

causes of, 269.

diagnosis of, 272.

from contagion, 269.

metastatic, 274.

symptoms of, 270.

treatment of, 272.

rheumatism, 275.

causes of, 276.

diagnosis of, 280.

seat of, 277.

symptoms of, 278.

treatment of, 281.

Guaiacum, use of, in syphilis, 493.

Gummata, 461.

H.

Habit, effect of, in gonorrhœa, 48.

Hemorrhage from the urethra, 139.

Hernia humoralis, 90.

Herpetic syphilitic eruptions, 444.

Hydrocele, complicating epididymitis, 94.

Hypospadias, cases of, 129, 227.

- I.
- Impotence, 258.
- Incompatibility of morbid actions, 34.
- Incubation of syphilis, 69.
- Induration of the base of a chancre, 283, 303.
Babington's remarks on, 288.
Ricord's remarks on, 295.
 microscopical characters of, 297.
 power of contagion of, 46.
 prognostic value of, 305, 318.
- Indurated chancre, 302.
 treatment of, 326.
- Infantile syphilis, 451.
- Infants, prophylaxis applied to, 518.
- Infiltration of urine, 218.
- Inflammation, 38.
 in neighborhood of urethra, 215.
- Inflammatory chancre, 298.
 treatment of, 331.
- Injections in gonorrhœa, 126.
 formulæ for, 126.
 objections to, met, 127, 172.
- Inoculation, experimental, 55, 405, 432, 452.
 results of, 55.
- Iodide of potassium, 498, 503.
- Iodized oil, 390.
- Iritis, syphilitic, 428.
 treatment of, 505.
- L.
- Lagneau's* treatment of gonorrhœa, 137.
- Lallemand's* porte-caustiques, 191.
- Leprosy, 426, 444.
- Lichen, 425, 443.
- Liver, syphilitic affections of, 463.
- Lues venerea, 893.
 divisible into two periods, 411.
 general observations on the treatment of, 465.
- Lungs, syphilitic affections of, 462.
- Lymphatics, inflammation of, 99.
- M.
- Malapert's* and *Reynaud's* treatment of buboes, 388.
- Mercury, action of, 476, 496.
 ill effects of, 499.
 influence of, in producing abortion, 502.
 internal administration of, 467, 478.
 local application of, to chancres, 324.
 necessary quantity of, to be given, 343, 497.
 presence of, in the secretions, 472.
 rules for use of, 496.
 salivation from, 499.
- Mercurial cachexia, 502.
 frictions, 479, 496.
 treatment, duration of, 343, 497.
 when required, 343.
- Mercurial tremor, 502.
- Meshes, 156.
- Metastatic ophthalmia, 273.
- Mortification, 39.
- Mouth, treatment of syphilitic affections of, 505.
- Mucous membranes, syphilitic affections of, 447.
 papules and tubercles, 441.
- Muscles, syphilitic tubercles in, 459.
- N.
- Nails, syphilitic affections of, 440.
 treatment of, 506.
- Neuralgic pains in the urethra, 149.
- Nitrate of silver injections, 126.
- Nurses, communication of syphilis by, 62, 530.
- O.
- Onychia, syphilitic, 440.
- Ophthalmia, gonorrhœal, 268.
- Opiated cerate, 325.
- Orchitis, 455.
- Osteocopic pains, 459.
 treatment of, 506.
- Ostitis, syphilitic, treatment of, 507.
- Ovary, affection of, in gonorrhœa, 106.
- P.
- Papular syphilitic eruptions, 441.
- Paraphimosis, 308, 313.
 treatment of, 338.
- Pemphigus neonatorum, 451.
- Periostitis, syphilitic, 459.
 treatment of, 506.
- Phagedenic chancre, 297.
Babington's remarks on, 349.
 effects of mercury on, 352.
 treatment of, 327.
- Phimosis, 308, 311.
 treatment of, 331, 336.
- Powers, comparative, of different parts of the body, 36.
- Primary syphilitic symptoms, 295.
- Prophylaxis of syphilis, 514.
- Prostate gland, affections of, 233.
 treatment of, 238.
 anomalies of, 237.
- Prostitutes, prophylaxis with regard to, 516.
- Psoriasis, 426, 443.
- Pustular syphilitic eruptions, 445.
- R.
- Rectum, treatment of chancres in, 326.
- Relapses in gonorrhœa, 74.
- Rheumatism, gonorrhœal, 275.
- Ricord's* porte-caustique and urethrotome, 191.
- Rousselot's* arsenical powder, 329.
- Rubeola, 440.
- Rupia, 426, 446.

- S.
- Salivation, mercurial, 499.
treatment of, 501.
from the use of iodide of potassium, 503.
- Sarcocele, tubercular, 159.
- Scarification of strictures, 192.
- Secondary symptoms, 418, 437.
definition of, 396, 411.
nature of, 396, 399.
period of development, 396.
pus from, not inoculable, 400.
treatment of, 465.
- Seminal emissions, 256.
- Serpiginous chancre, 297.
treatment of, 327.
- Seutin's* forceps, 340.
- Skin, secondary affections of, 421, 438.
characters of, 439.
division of, 438.
local treatment of, 504.
- Spermatic passages, lesions of, 238.
- Spermatorrhœa, 256.
- Squamous syphilitic eruptions, 443.
local treatment of, 504.
- Strictures, 161.
causes of, 162, 170.
exploration of, 166.
from external causes, 164.
in women, 194.
number of, 168.
organic, 163.
seat of, 168.
spasmodic, 162.
distinguishing characteristics of, 230.
treatment of, 178.
symptoms of, 165.
treatment of, 173, 177.
bougies, 197.
cauterization, 182, 188.
dilatation, 174, 178.
forced injections, 193.
puncture, 192.
resolvents, 178.
ruptures, 193.
scarifications, 192.
- Successive symptoms, 439.
- Superficial chancres, 303, 326.
- Syme's* operation, 194, 211.
- Sympathy, 33.
- Syphilis, three periods of, 396.
historical notice of, 521.
- T.
- Tartrate of iron and potash, 324.
- Teeth, transplanted, 536.
- Tertiary symptoms, 434, 453.
definition of, 396.
constitutional treatment of, 503.
local treatment of, 506.
- Testicles, affection of, in gonorrhœa, 90.
syphilitic affection of, 455.
atrophy of, 265.
- Throat, syphilitic affections of, 427.
treatment of, 505.
- Thymus gland, syphilitic affection of, 462.
- Tubercular syphilitic eruptions, 424, 446.
local treatment of, 507.
- Tunica albuginea, incisions of, 144.
- U.
- Ulcus elevatum, 298.
- Urethra, strictures of, 161.
enlargement of, 209.
- Urethral chancre, 56.
- Urethrotomy, 193.
- Urinary abscess, 218.
- Urine, suppression of, 246.
infiltration of, 218.
- V.
- Vaginitis, 105.
- Vegetations, 355.
microscopical characters of, 357.
treatment of, 358.
in the urethra, 163, 232.
- Vesiculæ seminales, lesions of, 239.
- Vesicular syphilitic eruptions, 444.
- Vienna paste, formula for, 321.
- Vidal's* incisions of the tunica albuginea, 144.
- Virus, syphilitic, 41, 520.
absorption of, 395.
can be propagated only by matter, 43, 46.
identity of in gonorrhœa and chancre, *Hunter's* belief in, 48.
Babington's remarks on, 51.
Ricord's remarks on, 54.
is no respecter of persons, 395.
nature of, 42.
origin of, 41.
retains its contagious property after a length of time, 292.
unity or plurality of, 308.
- Vital organs, susceptibility of, 37.
- W.
- Warts, 355.

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
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
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